DSX-M50BT

SERVICE MANUAL

US Model
Canadian Model

Ver. 1.0 2013.11

- This model is not equipped with a mechanism deck.

SPECIFICATIONS

FOR THE CUSTOMERS IN THE USA. NOT APPLICABLE IN CANADA, INCLUDING IN THE PROVINCE OF QUEBEC.

POUR LES CLIENTS AUX ÉTATS-UNIS. NON APPLICABLE AU CANADA, Y COMPRIS LA PROVINCE DE QUÉBEC.

AUDIO POWER SPECIFICATIONS

CEA2006 Standard
Power Output: 17 Watts RMS × 4 at 4 Ohms < 1% THD+N
SN Ratio: 80 dBA
(reference: 1 Watt into 4 Ohms)

Tuner section

FM

Tuning range:
- 87.5 – 108.0 MHz (at 50 kHz step)
- 87.5 – 108.0 MHz (at 100 kHz step)
- 87.5 – 107.9 MHz (at 200 kHz step)

FM tuning step:
- 50 kHz/100 kHz/200 kHz switchable

Antenna (aerial) terminal:
- External antenna (aerial) connector

Intermediate frequency: 25 kHz
Usable sensitivity: 8 dBf
Selectivity: 75 dB at 400 kHz
Signal-to-noise ratio: 80 dB (stereo)
Separation: 50 dB at 1 kHz
Frequency response: 20 – 15,000 Hz

AM

Tuning range:
- 531 – 1,602 kHz (at 9 kHz step)
- 530 – 1,710 kHz (at 10 kHz step)

AM tuning step:
- 9 kHz/10 kHz switchable

Antenna (aerial) terminal:
- External antenna (aerial) connector

Intermediate frequency:
- 9,124.5 kHz or 9,115.5 kHz/4.5 kHz (at 9 kHz step)
- 9,115 kHz or 9,125 kHz/5 kHz (at 10 kHz step)

Sensitivity: 26 µV

USB Player section

Interface: USB (Full-speed)
Maximum current: 1 A
The maximum number of recognizable data:
- Folders (albums): 128
- Files (tracks) per folder: 512

Corresponding codec:
- MP3 (.mp3) and WMA (.wma)

Wireless Communication

Communication System:
- BLUETOOTH Standard version 2.1 + EDR

Output:
- BLUETOOTH Standard Power Class 2 (Max. +4 dBm)

Maximum communication range:
- Line of sight approx. 10 m (33 ft)*1

Frequency band:
- 2.4 GHz band (2.4000 – 2.4835 GHz)

Modulation method: FHSS
Compatible BLUETOOTH Profiles*2:
- A2DP (Advanced Audio Distribution Profile) 1.2
- AVRCP (Audio Video Remote Control Profile) 1.3
- HFP (Handsfree Profile) 1.5
- PBAP (Phone Book Access Profile)

*1 The actual range will vary depending on factors such as obstacles between devices, magnetic fields around a microwave oven, static electricity, reception sensitivity, antenna (aerial)'s performance, operating system, software application, etc.

*2 BLUETOOTH standard profiles indicate the purpose of BLUETOOTH communication between devices.

Power amplifier section

Output: Speaker outputs
Speaker impedance: 4 – 8 ohms
Maximum power output: 55 W × 4 (at 4 ohms)

General

Outputs:
- Audio outputs terminal (front, rear)
- Power antenna (aerial)/Power amplifier control terminal (REM OUT)

Inputs:
- Remote controller input terminal
- Antenna (aerial) input terminal
- AUX input jack (stereo mini jack)
- USB port

Power requirements: 12 V DC boat battery (negative ground (earth))
Dimensions:
- Approx. 178 mm × 50 mm × 120 mm (7 1/8 in × 2 in × 4 7/8 in) (w/h/d)

Mounting dimensions:
- Approx. 182 mm × 53 mm × 103 mm (7 1/4 in × 2 1/8 in × 4 1/8 in) (w/h/d)

Mass: Approx. 0.7 kg (1 lb 9 oz)
Package contents:
- Remote commander (1): RM-X231
- Parts for installation and connections (1 set)

Design and specifications are subject to change without notice.

FM/AM DIGITAL MEDIA PLAYER

9-893-910-01
2013K33-1
© 2013.11

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Published by Sony Techno Create Corporation

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Accessories are given in the last of the electrical parts list.

NOTES ON CHIP COMPONENT REPLACEMENT

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

SECTION 1
SERVICING NOTES

UNLEADED SOLDER

Boards requiring use of unleaded solder are printed with the lead-free mark (LF) indicating the solder contains no lead.
(**Caution:** Some printed circuit boards may not come printed with the lead free mark due to their particular size)

: LEAD FREE MARK

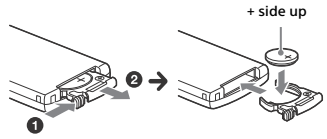
Unleaded solder has the following characteristics.

- Unleaded solder melts at a temperature about 40 °C higher than ordinary solder.
  Ordinary soldering irons can be used but the iron tip has to be applied to the solder joint for a slightly longer time.
  Soldering irons using a temperature regulator should be set to about 350 °C.
  Caution: The printed pattern (copper foil) may peel away if the heated tip is applied for too long, so be careful!
- Strong viscosity
  Unleaded solder is more viscous (sticky, less prone to flow) than ordinary solder so use caution not to let solder bridges occur such as on IC pins, etc.
- Usable with ordinary solder
  It is best to use only unleaded solder but unleaded solder may also be added to ordinary solder.

Maintenance

Replacing the lithium battery of the remote commander

When the battery becomes weak, the range of the remote commander becomes shorter. Replace the battery with a new CR2025 lithium battery. Use of any other battery may present a risk of fire or explosion.



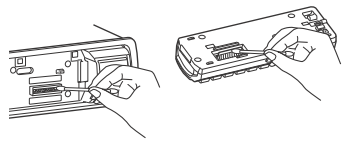
Notes on the lithium battery

- Keep the lithium battery out of the reach of children. Should the battery be swallowed, immediately consult a doctor.
- Wipe the battery with a dry cloth to assure a good contact.
- Be sure to observe the correct polarity when installing the battery.
- Do not hold the battery with metallic tweezers, otherwise a short-circuit may occur.

WARNING
Battery may explode if mistreated.
Do not recharge, disassemble, or dispose of in fire.

Cleaning the connectors

The unit may not function properly if the connectors between the unit and the front panel are not clean. In order to prevent this, detach the front panel and clean the connectors with a cotton swab. Do not apply too much force. Otherwise, the connectors may be damaged.



Notes

- For safety, turn off the ignition before cleaning the connectors, and remove the key from the ignition switch.
- Never touch the connectors directly with your fingers or with any metal device.

ABOUT CHECKING THE OPERATION

When checking the operation of this unit, connect a USB device to this unit.
Refer to the support site written in the operating instruction for the details about the compatibility of a USB device.

NOTE OF REPLACING THE KEY BOARD

When the KEY board is defective, exchange the FRONT PANEL ASSY (Ref. No. FP1).

NOTE OF REPLACING THE BT BOARD

When the BT board is defective, exchange the complete mounted board.

NOTE OF REPLACING THE IC603 ON THE MAIN BOARD

IC603 on the MAIN board cannot exchange with single. When this part is damaged, exchange the complete mounted board.

IMPORTANT NOTE OF "INITIALIZING"

The purpose of "Bluetooth Initialize" is to initialize the Bluetooth connection history (HF/Audio Streaming). (To delete the device information for the devices that you connected to when searching, etc.)
When the BT board or MAIN board (including BT board) are replaced, it is necessary to initialize this unit.
Refer to the following, initialize this unit.
Note: Phonebook data and dialed/received call history can be deleted by executing "Bluetooth Initialize."

Procedure:

1. In the state of source off (the clock is displayed), press and hold the [PUSH ENTER/SELECT/] button.
2. Rotate the control dial, and select the "BT INIT".
3. Press the [PUSH ENTER/SELECT/] button, and the message "INIT-NO" is displayed on the liquid crystal display.
4. Rotate the control dial clockwise, and the message "INIT-YES" is displayed on the liquid crystal display.
5. Press the [PUSH ENTER/SELECT/] button, and the message "INITIAL" is blinked on the liquid crystal display.
6. When "Bluetooth Initialize" is completed, the message "COMPLETE" is displayed on the liquid crystal display for a moment.
7. Press the [/MODE] button, and return to the state of source off (the clock is displayed) mode.

Canceling the DEMO Mode

You can cancel the demonstration display which appears while this unit is turned off.

1 **Press and hold SELECT.**
The setup display appears.

2 **Rotate the control dial to select [DEMO], then press it.**

3 **Rotate the control dial to select [DEMO-OFF], then press it.**
The setting is complete.

4 **Press (back).**
The display returns to normal reception/play mode.

NOTE OF REPLACING THE COMPLETE MAIN BOARD OR SYSTEM CONTROLLER (IC101)

When the complete MAIN board or system controller (IC101) is replaced, the destination setting is necessary.

1. Destination Setting

Set destination according to the procedure below.

1-1. Setting the Destination Code

1. In the state of source off (the clock is displayed), enter the test mode by pressing the buttons on the remote commander in order of the [4] ⟶ [5] ⟶ [6] (press only the [6] button for two seconds).
2. In the state in which the system controller version is displayed on the liquid crystal display (refer to following figure), enter the destination setting mode by pressing the buttons on the main unit in order of the [SEEK+ ▶▶ ▶▶I] ⟶ [SEEK– I◀◀ ◀◀] ⟶ [PUSH ENTER/SELECT/📞].
   (Displayed characters/values in the following figure are example)

System controller version

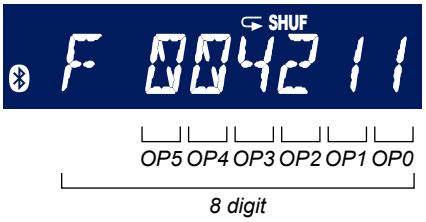
3. Input the alphanumeric character of 8 digits of "F XXXXXX" displayed on the liquid crystal display, and execute the destination setting.

Note: Refer to following "1-3. Entering the Destination Code" for operation method.

4. The resetting operation is executed by pressing the [SOURCE ━ OFF] button for 1 second after the setting ends, and the unit returns to the normal condition.

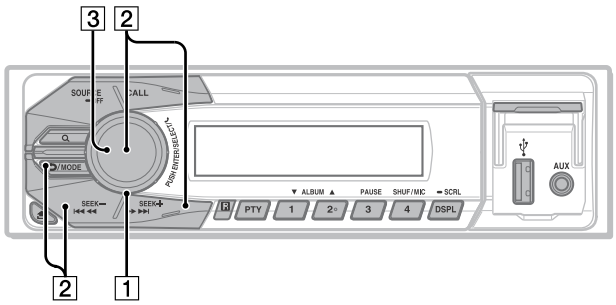
1-2. Display in Destination Setting Mode

Destination code



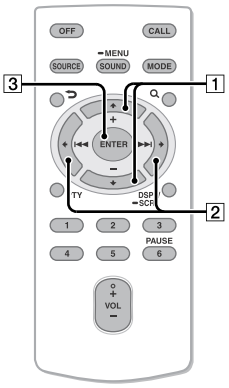
1-3. Entering the Destination Code

- **Method of operation by main unit**



1. Rotate the control dial, and select the alphanumeric character of "0 to F".
2. The digit advances by pressing the [PUSH ENTER/SELECT/📞] or [SEEK+ ▶▶ ▶▶I] button.
   The digit returns by pressing the [⮌/MODE] or [SEEK– I◀◀ ◀◀] button.
3. The setting is completed by pressing the [PUSH ENTER/SELECT/📞] button, and the initialization operation is done.

- **Method of operation by remote commander**



1. Press the [▲] or [▼] button, and select the alphanumeric character of "0 to F".
2. The digit advances by pressing the [▶] button.
   The digit returns by pressing the [◀] button.
3. The setting is completed by pressing the [ENTER] button, and the initialization operation is done.

1-4. Destination Code

Destination	OP5	OP4	OP3	OP2	OP1	OP0
US, Canadian	0	0	4	2	2	0

2. Confirmation After Destination Setting

Execute the following operation after completing the destination setting, and confirm a correct destination was set.

Destination setting checking method:

1. In the state of source off (the clock is displayed on the liquid crystal display), enter the test mode by pressing the buttons on the remote commander in order of the [4] ⟶ [5] ⟶ [6] (press only the [6] button for two seconds).
2. In the state in which the system controller version is displayed on the liquid crystal display (refer to following figure), enter the destination setting value display mode by pressing the [━ SCRL DSPL] button on the main unit three times.
   (Displayed characters/values in the following figure are example)

System controller version

3. Confirm the alphanumeric character of 8 digits of in liquid crystal display is an value correctly input.
   (Displayed characters/values in the following figure are example)

Destination code

4. The resetting operation is executed by pressing the [SOURCE ━ OFF] button on the main unit for 1 second after the confirming ends, and the unit returns to the normal condition.

BLUETOOTH FUNCTION CHECKING METHOD USING A CELLULAR PHONE

1. Required Equipment

- Set to be tested (DSX-M50BT)
- Cellular phone (Recommended SEMC W880 or W910i, or select from connectable cellular phones list)
- Bluetooth audio devices (SONY NWZ-A826, or select from connectable cellular phones/audio devices list)
- Speaker connection (at least Front L/R ch)
- DC power supply (12 V)

2. Preparation

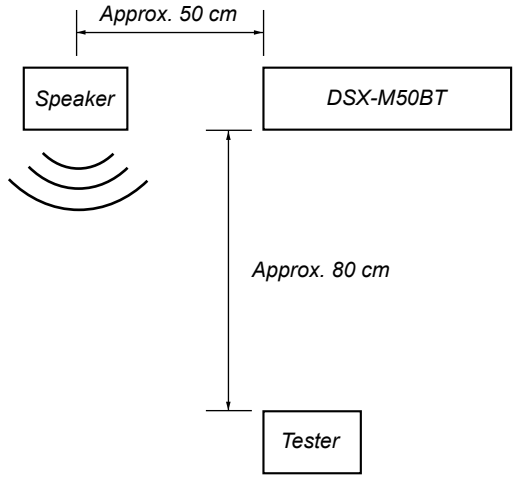
- Confirm the setting of the DSX-M50BT, and note down it.
- Press the [CALL] button and rotate the control dial until "PAIRING" appears, then press it, confirm that the Bluetooth signal icon ( ) is flashing.
- Turn on the Bluetooth function of the cellular phone.

3. Test Environment

- No other Bluetooth device is making a communication in the periphery (within 20 m).
- No other DSX-M50BT are supplied with electric power.
- There are no two or more wireless LAN access points in the periphery (with 50 m) (one is OK).
- The set should be tested in a place such as a meeting room, free from ambient noise.
- The speaker at the far end should be in a place such as another meeting room separated acoustically.

4. Setting

Install the DSX-M50BT on the desktop.



5. Precautions

Beware of the following points when conducting the talking test:

- There is no fault if a talking can be made by adjusting appropriately the volume of the telephone of the other party and the cellular phone connected through the Bluetooth, besides the setup of DSX-M50BT.
- The speaker's voice will become loud naturally if the periphery is noisy, or become low if quiet (even though the speaker intents to talk on the same volume level).
- The speaker's voice will become loud naturally if the other party's voice is loud.

6. Bluetooth Phone (Hands Free) Function Check

1. Search for this unit from the Bluetooth device (cellular phone), and confirm whether this unit ("Sony Automotive") is displayed.
2. Search for the distance of this unit and the Bluetooth device (cellular phone) about 5 m apart.
   Confirm whether the Bluetooth device (or this unit) is displayed after it searches.
3. Do the pairing of the cellular phone and this unit (input of pass key).
4. Connect the cellular phone with this unit, and confirm the "HF" icon ( ) lights.
5. Confirm the connection continues even if the distance of the cellular phone and this unit is separated by about 5 m.
6. Set this unit besides the "BT PHONE" source, and call the cellular phone connected with this unit.
   Confirm the automatic change of this unit into "BT PHONE" source, and the change into the screen for incoming calls.
   Confirm the ring tone is heard from the speaker.
7. Take a phone call (press the [CALL] button), and start a conversation.
   Confirm the other person voice is heard from the front speaker.
   Speak toward the microphone of this unit, and confirm whether the other party hears its voice.
   Compare the sound quality with a normal set. Confirm that there is no big difference.
8. Turn on ACC from off, and confirm whether this unit connects Bluetooth with the cellular phone again.

Note: Depending on the cellular phone, it might not reconnect automatically when ACC is turned on.

7. Bluetooth Audio Function Check

Note: Depending on the connecting BT Audio device, track information (e.g. track name, playback time) can be on display.
If the device doesn't support AVRCP1.3, or, if AVRCP1.3 feature of the device has not been validated with DSX-M50BT;
the track information won't be shown.
Even if there is no track information on display during playback of an AVRCP1.3 device, it is not a failure of DSX-M50BT.

1. Connect the Bluetooth audio device (or cellular phone with Bluetooth audio function) with this unit, and confirm the "Audio Streaming" icon ( )lights.
2. Playback Bluetooth audio. Confirm the sound is emitted from this unit when this unit is switched to "Bluetooth Audio" source.
3. Confirm whether Bluetooth audio can be controlled by operating this unit (the [SEEK+ ▶▶ ▶▶I], [SEEK– I◀◀ ◀◀] and [PAUSE 3] buttons operation).

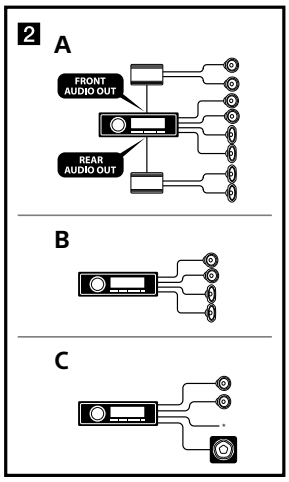
Note: Varies depending on the connected Bluetooth audio device.

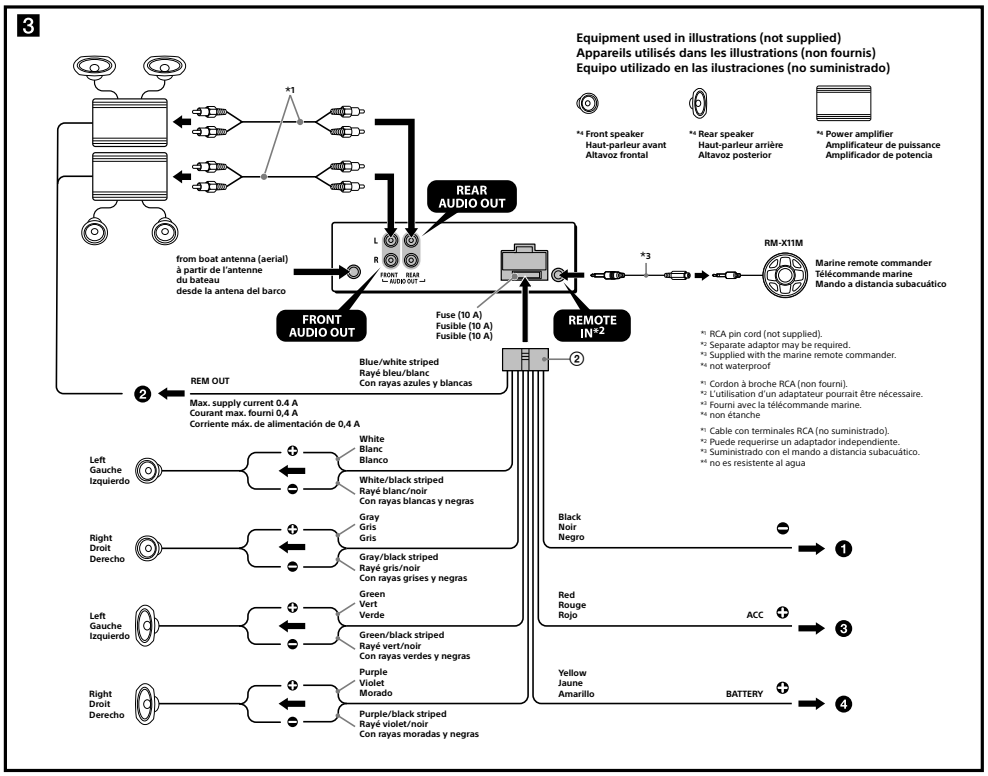
8. What to Do after Checking

- After checking, select "BT INIT" from the menu list of this unit to execute initialization.
  (Connected device information is deleted)

SECTION 2
GENERAL

This section is extracted from instruction manual.





English

Cautions

Be sure to install this unit in the dashboard of the boat as the rear side of the unit becomes hot during use.

- This unit is designed for negative ground (earth) 12 V DC operation only.
- Do not get the leads under a screw, or caught in moving parts (e.g. seat railing).
- Before making connections, turn the boat's ignition off to avoid short circuits.
- Connect the **yellow** and **red** power supply leads only after all other leads have been connected.
- **Run all ground (earth) leads to a common ground (earth) point.**
- Be sure to insulate any loose unconnected leads with electrical tape for safety.
- Under the environment of potential water splash, Sony highly recommends to protect the unit with Waterproof Car Stereo Cover (not supplied). While an iPod or USB device is connected, the Waterproof Car Stereo Cover cannot be fully closed. Avoid splashing water on the unit.

Notes on the power supply lead (yellow)

- When connecting this unit in combination with other stereo components, the connected boat circuit's rating must be higher than the sum of each component's fuse.
- When no boat circuits are rated high enough, connect the unit directly to the battery.

Connection example (2)

Subwoofer Easy Connection (2-C)
You can use a subwoofer without a power amplifier when it is connected to a rear speaker cord.

* Do not connect a speaker in this connection.

Notes
- Be sure to connect the ground (earth) lead before connecting the amplifier (2-A).
- The alarm will only sound if the built-in amplifier is used (2-A).
- Be sure to connect a 4 - 8 ohm subwoofer. Do not connect a speaker to the other rear speaker cord (2-C).

Connection diagram (3)

1 To battery or distribution block ground
First connect the black ground (earth) lead, then connect the yellow and red power supply leads.

2 To the power antenna (aerial) control lead or power supply lead of antenna (aerial) booster

Notes
- It is not necessary to connect this lead if there is no power antenna (aerial) or antenna (aerial) booster, or with a manually-operated telescopic antenna (aerial).
- When your boat has a built-in FM/AM antenna (aerial) in the rear/side glass, see "Notes on the control and power supply leads."

To AMP REMOTE IN of an optional power amplifier
This connection is only for amplifiers and a power antenna (aerial). Connecting any other system may damage the unit.

3 To the +12 V power terminal which is energized in the accessory position of the ignition switch

Notes
- If there is no accessory position, connect to the +12 V power (battery) terminal which is energized at all times. Be sure to connect the black ground (earth) lead to the battery or distribution block ground first.
- When your boat has a built-in FM/AM antenna (aerial) in the rear/side glass, see "Notes on the control and power supply leads."

4 To the +12 V power terminal which is energized at all times
Be sure to connect the black ground (earth) lead to the battery or distribution block ground first.

Notes on the control and power supply leads
- REM OUT lead (blue/white striped) supplies +12 V DC when you turn on the unit.
- When your boat has built-in FM/AM antenna (aerial) in the rear/side glass, connect REM OUT lead (blue/white striped) or the accessory power supply lead (red) to the power terminal of the existing antenna (aerial) booster. For details, consult your dealer.
- A power antenna (aerial) without a relay box cannot be used with this unit.

Memory hold connection
When the yellow power supply lead is connected, power will always be supplied to the memory circuit even when the ignition switch is turned off.

Notes on speaker connection
- Before connecting the speakers, turn the unit off.
- Use speakers with an impedance of 4 to 8 ohms, and with adequate power handling capacities to avoid its damage.
- Do not connect the speaker terminals to the boat chassis, or connect the terminals of the right speakers with those of the left speaker.
- Do not connect the ground (earth) lead of this unit to the negative (–) terminal of the speaker.
- Do not attempt to connect the speakers in parallel.
- Connect only passive speakers. Connecting active speakers (with built-in amplifiers) to the speaker terminals may damage the unit.
- To avoid a malfunction, do not use the built-in speaker leads installed in your boat if the unit shares a common negative (–) lead for the right and left speakers.
- Do not connect the unit's speaker leads to each other.

Note on connection
If speaker and amplifier are not connected correctly, "ERROR" appears in the display. In this case, make sure the speaker and amplifier are connected correctly.

Français

Mises en garde

Installez cet appareil sur le tableau de bord du bateau, car l'arrière de l'appareil chauffe en cours d'utilisation.

- Cet appareil est exclusivement conçu pour fonctionner sur une tension de 12 V CC avec masse négative.
- Évitez de fixer des vis sur les câbles ou de coincer ceux-ci dans des pièces mobiles (par exemple, armature de siège).
- Avant d'effectuer les raccordements, coupez le contact du bateau pour éviter les courts-circuits.
- Raccordez les câbles d'alimentation **jaune** et **rouge** seulement après avoir terminé tous les autres raccordements.
- **Rassemblez tous les câbles de mise à la masse en un point de masse commun.**
- Pour des raisons de sécurité, veillez à isoler avec du ruban isolant tout câble libre non raccordé.
- Si l'appareil risque d'être exposé à des éclaboussures d'eau, Sony recommande fortement de le protéger avec une housse imperméable pour chaîne stéréo de voiture (non fournie). Lorsqu'un iPod ou un périphérique USB est raccordé, la housse imperméable pour chaîne stéréo de voiture ne peut pas se fermer complètement. Évitez d'exposer l'appareil à des éclaboussures d'eau.

Remarques sur le câble d'alimentation (jaune)
- Lorsque cet appareil est raccordé à d'autres éléments stéréo, la valeur nominale du circuit du bateau raccordé doit être supérieure à la somme des fusibles de chaque élément.
- Si aucun circuit du bateau n'est assez puissant, raccordez directement l'appareil à la batterie.

Exemple de raccordement (2)

Raccordement facile d'un caisson de graves (2-C)
Vous pouvez utiliser un caisson de graves sans amplificateur de puissance lorsque vous effectuez le raccordement à un cordon de haut-parleur arrière.

* Ne raccordez pas un haut-parleur avec cette connexion.

Remarques
- Raccordez d'abord le câble de mise à la masse avant de raccorder l'amplificateur (2-A).
- L'alarme est émise uniquement lorsque l'amplificateur intégré est utilisé (2-A).
- Assurez-vous de raccorder un caisson de graves de 4 - 8 ohms. Ne raccordez pas de haut-parleur à l'autre cordon de haut-parleur arrière (2-C).

Schéma de raccordement (3)

1 Vers la batterie ou le répartiteur de terre
Branchez d'abord le câble de mise à la masse noir et, ensuite, les câbles d'alimentation jaune et rouge.

2 Au câble de commande d'antenne électrique ou au câble d'alimentation de l'amplificateur d'antenne

Remarques
- Il n'est pas nécessaire de raccorder ce câble s'il n'y a pas d'antenne électrique ni d'amplificateur d'antenne, ou avec une antenne télescopique manuelle.
- Si votre bateau est équipé d'une antenne FM/AM intégrée dans la vitre arrière/latérale, voir « Remarques sur les câbles de commande et d'alimentation ».

Au niveau de AMP REMOTE IN de l'amplificateur de puissance en option
Ce raccordement s'applique uniquement aux amplificateurs et à une antenne électrique. Le branchement de tout autre système risque d'endommager l'appareil.

3 À la borne d'alimentation +12 V qui est alimentée quand la clé de contact est sur la position accessoires

Remarques
- S'il n'y a pas de position accessoires, raccordez la borne d'alimentation (batterie) +12 V qui est alimentée en permanence. Commencez par raccorder le câble de mise à la masse noir à la batterie ou au répartiteur de terre.
- Si votre bateau est équipé d'une antenne FM/AM intégrée dans la vitre arrière/latérale, voir « Remarques sur les câbles de commande et d'alimentation ».

4 À la borne d'alimentation +12 V qui est alimentée en permanence
Commencez par raccorder le câble de mise à la masse noir à la batterie ou au répartiteur de terre.

Remarques sur les câbles de commande et d'alimentation
- Le câble REM OUT (rayé bleu/blanc) fournit une alimentation de +12 V CC lorsque vous mettez l'appareil en marche.
- Lorsque votre bateau est équipé d'une antenne FM/AM intégrée dans la vitre arrière/latérale, raccordez le câble REM OUT (rayé bleu/blanc) ou le câble d'alimentation des accessoires (rouge) à la borne d'alimentation de l'amplificateur d'antenne existant. Pour plus de détails, consultez votre détaillant.
- Une antenne électrique sans boîtier de relais ne peut pas être utilisée avec cet appareil.

Raccordement pour la conservation de la mémoire
Lorsque le câble d'alimentation jaune est raccordé, le circuit de la mémoire est alimenté en permanence même si la clé de contact est sur la position d'arrêt.

Remarques sur le raccordement des haut-parleurs
- Avant de raccorder les haut-parleurs, éteignez l'appareil.
- Utilisez des haut-parleurs ayant une impédance de 4 à 8 ohms avec une capacité électrique adéquate pour éviter de les endommager.
- Ne raccordez pas les bornes du système de haut-parleurs au châssis du bateau et ne raccordez pas les bornes du haut-parleur droit à celles du haut-parleur gauche.
- Ne raccordez pas le câble de mise à la masse de cet appareil à la borne négative (–) du haut-parleur.
- N'essayez pas de raccorder les haut-parleurs en parallèle.
- Raccordez uniquement des haut-parleurs passifs. Le raccordement de haut-parleurs actifs (avec amplificateurs intégrés) aux bornes des haut-parleurs peut endommager l'appareil.
- Pour éviter tout problème de fonctionnement, n'utilisez pas les câbles des haut-parleurs intégrés installés dans votre bateau si l'appareil possède un câble négatif commun (–) pour les haut-parleurs droit et gauche.
- Ne raccordez pas entre eux les câbles des haut-parleurs de l'appareil.

Remarque sur le raccordement
Si le haut-parleur et l'amplificateur ne sont pas raccordés correctement, le message « ERROR » s'affiche. Dans ce cas, assurez-vous que les haut-parleurs et l'amplificateur sont bien raccordés.

Español

Precauciones

Asegúrese de instalar la unidad en el tablero del barco, ya que la parte posterior de la unidad se calienta durante el uso.

- Esta unidad ha sido diseñada para alimentarse sólo con cc de 12 V de masa negativa.
- No coloque los cables debajo de ningún tornillo, ni los aprisione con partes móviles (p. ej. los rieles del asiento).
- Antes de realizar las conexiones, desactive el encendido del barco para evitar cortocircuitos.
- Conecte los cables de fuente de alimentación **amarillo** y **rojo** solamente después de haber conectado los demás.
- **Conecte todos los cables de conexión a masa a un punto común.**
- Por razones de seguridad, asegúrese de aislar con cinta aislante los cables sueltos que no estén conectados.
- En caso de riesgo accidental de salpicaduras de agua, Sony recomienda encarecidamente proteger la unidad con una Cubierta resistente al agua para el reproductor estéreo (no suministrado). Mientras el iPod o el dispositivo USB está conectado, la Cubierta resistente al agua para el reproductor estéreo no puede cerrarse por completo. Evite tirar agua sobre la unidad.

Notas sobre el cable de fuente de alimentación (amarillo)
- Cuando conecte esta unidad en combinación con otros componentes estéreo, la capacidad nominal del circuito conectado del barco debe ser superior a la suma del fusible de cada componente.
- Si no hay circuitos del barco con capacidad nominal suficientemente alta, conecte la unidad directamente a la batería.

Ejemplo de conexiones (2)

Conexión sencilla del altavoz potenciador de graves (2-C)
Cuando el altavoz potenciador de graves está conectado al cable de altavoz posterior, puede usarlo sin un amplificador de potencia.

* No conecte un altavoz a esta conexión.

Notas
- Asegúrese de conectar primero el cable de conexión a masa antes de realizar la conexión del amplificador (2-A).
- La alarma sonará únicamente si se utiliza el amplificador incorporado (2-A).
- Asegúrese de conectar un altavoz potenciador de graves de 4 a 8 Ω. No conecte un altavoz al otro cable de altavoz posterior (2-C).

Diagrama de conexión (3)

1 A la conexión a masa de la batería o del bloque de distribución
Conecte primero el cable de conexión a masa negro, y después los cables amarillo y rojo de fuente de alimentación.

2 Al cable de control de la antena motorizada o al cable de fuente de alimentación del amplificador de señal de la antena

Notas
- Si no se dispone de antena motorizada ni de amplificador de señal de la antena, o se utiliza una antena telescópica accionada manualmente, no será necesario conectar este cable.
- Si el barco tiene una antena de FM/AM incorporada en el cristal trasero o lateral, consulte "Notas sobre los cables de control y de fuente de alimentación".

A AMP REMOTE IN de un amplificador de potencia opcional
Esta conexión es sólo para amplificadores y una antena motorizada. La conexión de cualquier otro sistema puede dañar la unidad.

3 Al terminal de alimentación de +12 V que recibe energía en la posición de accesorio del interruptor de encendido

Notas
- Si no hay posición de accesorio, conéctelo al terminal de alimentación (batería) de +12 V que recibe energía sin interrupción. Asegúrese de conectar primero el cable de conexión a masa negro a la batería o a la toma a masa del bloque de distribución.
- Si el barco tiene una antena de FM/AM incorporada en el cristal trasero o lateral, consulte "Notas sobre los cables de control y de fuente de alimentación".

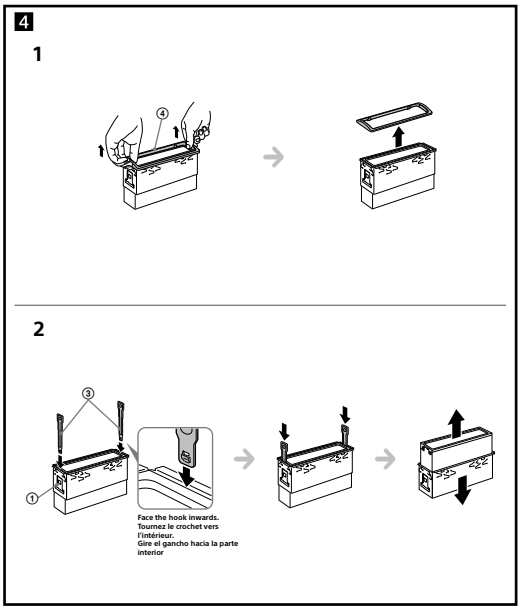
4 Al terminal de alimentación de +12 V que recibe energía sin interrupción
Asegúrese de conectar primero el cable de conexión a masa negro a la batería o a la toma a masa del bloque de distribución.

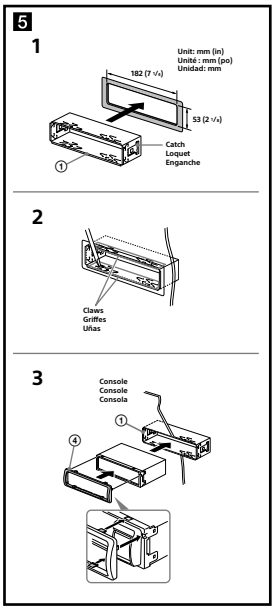
Notas sobre los cables de control y de fuente de alimentación
- El cable REM OUT (rayado azul y blanco) suministra cc de +12 V al encender la unidad.
- Si el barco tiene una antena FM/AM integrada en el cristal posterior o lateral, conecte el cable REM OUT (rayado azul y blanco) o el cable de fuente de alimentación auxiliar (rojo) al terminal de alimentación del amplificador de señal de la antena existente. Para obtener más detalles, consulte a su distribuidor.
- Con esta unidad no es posible utilizar una antena motorizada sin caja de relé.

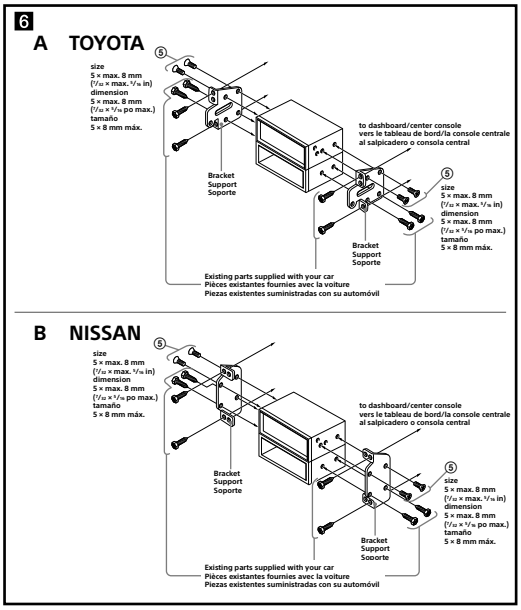
Conexión para protección de la memoria
Si conecta el cable de fuente de alimentación amarillo, el circuito de la memoria recibirá siempre alimentación, aunque apague el interruptor de encendido.

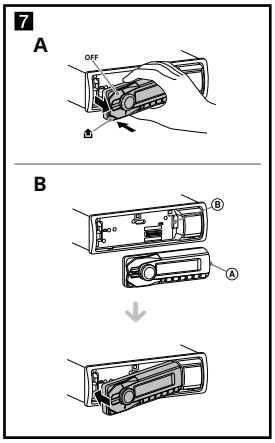
Notas sobre la conexión de los altavoces
- Antes de conectar los altavoces, desconecte la alimentación de la unidad.
- Utilice altavoces con una impedancia de 4 a 8 Ω, con la capacidad de potencia adecuada para evitar que se dañen.
- No conecte los terminales de altavoz al chasis del barco, ni conecte los terminales del altavoz derecho con los del izquierdo.
- No conecte el cable de conexión a masa de esta unidad al terminal negativo (–) del altavoz.
- No intente conectar los altavoces en paralelo.
- Conecte solamente altavoces pasivos. Si conecta altavoces activos (con amplificadores incorporados) a los terminales de altavoz, puede dañar la unidad.
- Para evitar fallas de funcionamiento, no utilice los cables de altavoz incorporados instalados en el barco si la unidad comparte un cable negativo común (–) para los altavoces derecho e izquierdo.
- No conecte los cables de altavoz de la unidad entre sí.

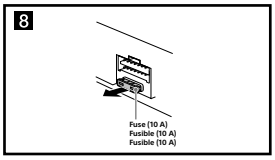
Nota sobre la conexión
Si el altavoz y el amplificador no están conectados correctamente, aparecerá "ERROR" en la pantalla. Si es así, compruebe la conexión de ambos dispositivos.











English

Precautions

- Choose the installation location carefully so that the unit will not interfere with normal boating or car driving operations.
- Avoid installing the unit in areas subject to dust, dirt, excessive vibration, or high temperatures, such as in direct sunlight or near heater ducts.
- Select carefully the mounting location to avoid internal damage by water entering the unit. Areas subject to water splashes should be avoided. The Waterproof Car Stereo Cover (not supplied) is recommended.
- Use only the supplied mounting hardware for a safe and secure installation.

Mounting angle adjustment

Adjust the mounting angle to less than 45°.

Removing the protection collar and the bracket (4)

Before installing the unit, remove the protection collar ④ and the bracket ① from the unit.

1 **Remove the protection collar ④.**
Pinch both edges of the protection collar ④, then pull it out.

2 **Remove the bracket ①.**
❶ Insert both release keys ③ together between the unit and the bracket ① until they click.
❷ Pull down the bracket ①, then pull up the unit to separate.

Mounting example (5)

Installation in the cutout hole on boat

Notes
- Before installing, make sure that the catches on both sides of the bracket ① are bent inwards 2 mm (1/16 in). If the catches are straight or bent outwards, the unit will not be installed securely and may spring out (5-1).
- Bend these claws outward for a tight fit, if necessary (5-2).
- Make sure that the 4 catches on the protection collar ④ are properly engaged in the slots of the unit (5-3).

Mounting the unit in a Japanese car (6)

You may not be able to install this unit in some makes of Japanese cars. In such a case, consult your Sony dealer.

Note
To prevent malfunction, install only with the supplied screws ⑤.

How to detach and attach the front panel (7)

Before installing the unit, detach the front panel.

7-A To detach

Before detaching the front panel, be sure to press and hold OFF. Press ⏏ and pull it off towards you.

7-B To attach

Engage part Ⓐ of the front panel with part Ⓑ of the unit, as illustrated, and push the left side into position until it clicks.

Warning if your boat's ignition has no ACC position

Be sure to set the Auto Off function. For details, see the supplied Operating Instructions.
The unit will shut off completely and automatically in the set time after the unit is turned off, which prevents battery drain.
If you do not set the Auto Off function, press and hold OFF until the display disappears each time you turn the ignition off.

Fuse replacement (8)

When replacing the fuse, be sure to use one matching the amperage rating stated on the original fuse. If the fuse blows, check the power connection and replace the fuse. If the fuse blows again after replacement, there may be an internal malfunction. In such a case, consult your nearest Sony dealer.

Notes on the tuning step

- For how to set the tuning step, see the supplied Operating Instructions.
- If replacing the boat battery or changing the connections, the tuning step setting will be erased.

Français

Précautions

- Choisissez soigneusement l'emplacement d'installation pour que l'appareil ne gêne pas la conduite du bateau ou de la voiture.
- Évitez d'installer l'appareil dans un endroit exposé à la poussière, à la saleté, à des vibrations excessives ou à des températures élevées comme en plein soleil ou à proximité de conduits de chauffage.
- Sélectionnez soigneusement l'emplacement d'installation afin d'éviter que l'eau ne pénètre à l'intérieur de l'appareil et n'entraîne des problèmes de fonctionnement. Évitez les zones sujettes aux projections d'eau. L'utilisation de la housse imperméable pour chaîne stéréo de voiture (non fournie) est recommandée.
- Pour garantir un montage sûr, n'utilisez que le matériel fourni.

Réglage de l'angle de montage

Réglez l'inclinaison à un angle inférieur à 45°.

Retrait du tour de protection et du support (4)

Avant d'installer l'appareil, retirez le tour de protection ④ et le support ① de l'appareil.

1 **Retirez le tour de protection ④.**
Pincez les deux bords du tour de protection ④, puis sortez-le.

2 **Retirez le support ①.**
❶ Insérez les clés de déblocage ③ en même temps entre l'appareil et le support ① jusqu'au déclic.
❷ Tirez le support ① vers le bas, puis tirez sur l'appareil vers le haut pour les séparer.

Exemple de montage (5)

Installation dans l'orifice prédécoupé sur le bateau

Remarques
- Avant l'installation, assurez-vous que les loquets des deux côtés du support ① sont bien pliés de 2 mm (1/16 po) vers l'intérieur. Si les loquets sont droits ou pliés vers l'extérieur, l'appareil ne peut pas être fixé solidement et peut se détacher (5-1).
- Si nécessaire, pliez ces griffes vers l'extérieur pour assurer une prise correcte (5-2).
- Assurez-vous que les 4 loquets situés sur le tour de protection ④ sont correctement engagés dans les fentes de l'appareil (5-3).

Montage de l'appareil dans une voiture japonaise (6)

Cet appareil ne peut pas être installé dans certaines voitures japonaises. Consultez, dans ce cas, votre détaillant Sony.

Remarque
Pour éviter tout problème de fonctionnement, utilisez uniquement les vis ⑤ fournies pour le montage.

Español

Precauciones

- Elija cuidadosamente el lugar de montaje de forma que la unidad no interfiera con las funciones normales de conducción del automóvil o del barco.
- Evite instalar la unidad donde pueda quedar expuesta a polvo, suciedad, vibraciones excesivas o altas temperaturas, por ejemplo, a la luz solar directa o cerca de conductos de calefacción.
- Seleccione cuidadosamente el lugar de montaje para evitar que el agua provoque daños internos. Deben evitarse las zonas expuestas a salpicaduras de agua. Se recomienda utilizar la cubierta resistente al agua para el reproductor estéreo para automóviles (no suministrada).
- Para realizar una instalación segura y firme, utilice solamente elementos de instalación suministrados.

Ajuste del ángulo de montaje

Ajuste el ángulo de montaje a menos de 45°.

Extracción del marco de protección y del soporte (4)

Antes de instalar la unidad, retire el marco de protección ④ y el soporte ① de la misma.

1 **Retire el marco de protección ④.**
Apriete ambos bordes del marco de protección ④ y, a continuación, tire de él hacia fuera.

2 **Retire el soporte ①.**
❶ Inserte ambas llaves de liberación ③ entre la unidad y el soporte ① hasta que encajen.
❷ Presione el soporte ① y, a continuación, levante la unidad para separar ambos elementos.

Ejemplo de montaje (5)

Instalación en el orificio de corte del barco

Notas
- Antes de instalar la unidad, compruebe que los enganches de ambos lados del soporte ① estén doblados hacia adentro 2 mm. Si no lo están o están doblados hacia afuera, la unidad no se instalará correctamente y puede saltar (5-1).
- Si es necesario, doble las uñas hacia fuera para que encaje firmemente (5-2).
- Compruebe que los 4 enganches del marco de protección ④ estén bien fijados en las ranuras de la unidad (5-3).

Montaje de la unidad en un automóvil japonés (6)

Es posible que no pueda instalar esta unidad en algunos automóviles japoneses. En tal caso, consulte a su distribuidor Sony.

Nota
Para evitar que se produzcan fallas de funcionamiento, realice la instalación solamente con los tornillos suministrados ⑤.

Retrait et fixation de la façade (7)

Avant d'installer l'appareil, retirez la façade.

7-A Pour la retirer

Avant de retirer la façade, n'oubliez pas de maintenir enfoncée la touche OFF. Appuyez ensuite sur ⏏, puis faites glisser la façade vers vous.

7-B Pour la fixer

Engagez la partie Ⓐ de la façade dans la partie Ⓑ de l'appareil, comme illustré, puis appuyez sur le côté gauche jusqu'au déclic indiquant que la façade est en position.

Avertissement si le contact de votre bateau ne comporte pas de position ACC

Veillez à régler la fonction Auto Off. Pour obtenir davantage d'informations, reportez-vous au mode d'emploi fourni.
L'appareil s'éteint complètement et automatiquement après le laps de temps choisi une fois l'appareil arrêté afin d'éviter que la batterie ne se décharge.
Si vous ne réglez pas la fonction Auto Off, appuyez sur la touche OFF et maintenez-la enfoncée jusqu'à ce que l'affichage disparaisse à chaque fois que vous coupez le contact.

Remplacement du fusible (8)

Lorsque vous remplacez le fusible, veillez à utiliser un fusible dont l'intensité, en ampères, correspond à la valeur indiquée sur le fusible usagé. Si le fusible grille, vérifiez le branchement de l'alimentation et remplacez le fusible. Si le nouveau fusible grille également, il est possible que l'appareil soit défectueux. Dans ce cas, consultez votre détaillant Sony le plus proche.

Remarque sur l'intervalle de syntonisation

- Pour savoir comment régler l'intervalle de syntonisation, consultez le mode d'emploi fourni.
- Si vous remplacez la batterie du bateau ou modifiez les raccordements, le réglage de l'intervalle de syntonisation sera effacé.

Forma de extraer e instalar el panel frontal (7)

Antes de instalar la unidad, extraiga el panel frontal.

7-A Para extraerlo

Antes de extraer el panel frontal, asegúrese de mantener presionado OFF. Presione ⏏ y luego extráigalo hacia usted.

7-B Para instalarlo

Coloque la parte Ⓐ del panel frontal en la parte Ⓑ de la unidad, como se muestra en la ilustración, y después presione la parte izquierda hasta que encaje.

Advertencia: si el encendido del barco no dispone de una posición ACC

Asegúrese de ajustar la función de desconexión automática. Para obtener más información, consulte el manual de instrucciones suministrado.
La unidad se apagará completa y automáticamente en el tiempo establecido después de que se desconecte la unidad, lo que evita que se desgaste la batería.
Si no ha ajustado la función de desconexión automática, mantenga presionado OFF cada vez que apague el interruptor de encendido, hasta que la pantalla desaparezca.

Sustitución del fusible (8)

Al sustituir el fusible, asegúrese de utilizar uno cuyo amperaje coincida con el especificado en el original. Si el fusible se funde, verifique la conexión de alimentación y sustitúyalo. Si el fusible vuelve a fundirse después de sustituirlo, es posible que exista alguna falla de funcionamiento interno. En tal caso, consulte con el distribuidor Sony más cercano.

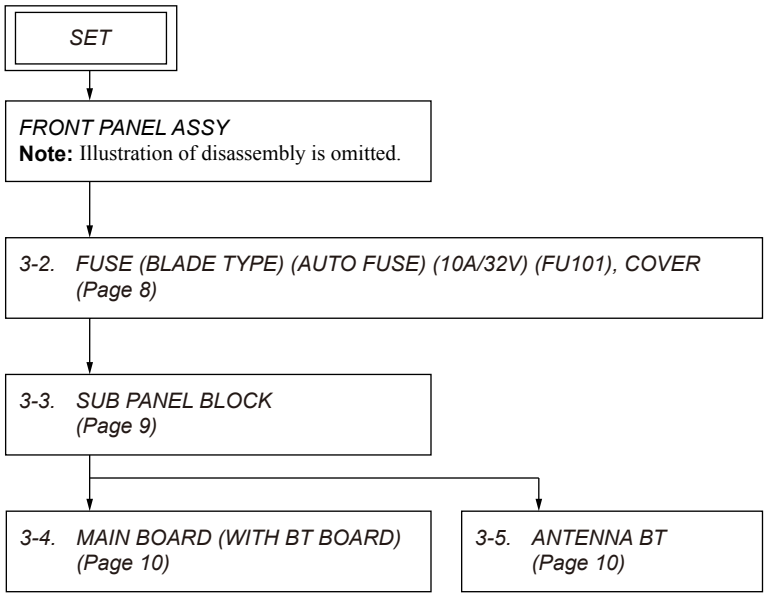
Notas acerca de la sintonización

- Para obtener información sobre cómo ajustar la sintonización, consulte el manual de instrucciones suministrado.
- Si se reemplaza la batería del barco o se cambian las conexiones, la configuración de la sintonización se borrará.

SECTION 3
DISASSEMBLY

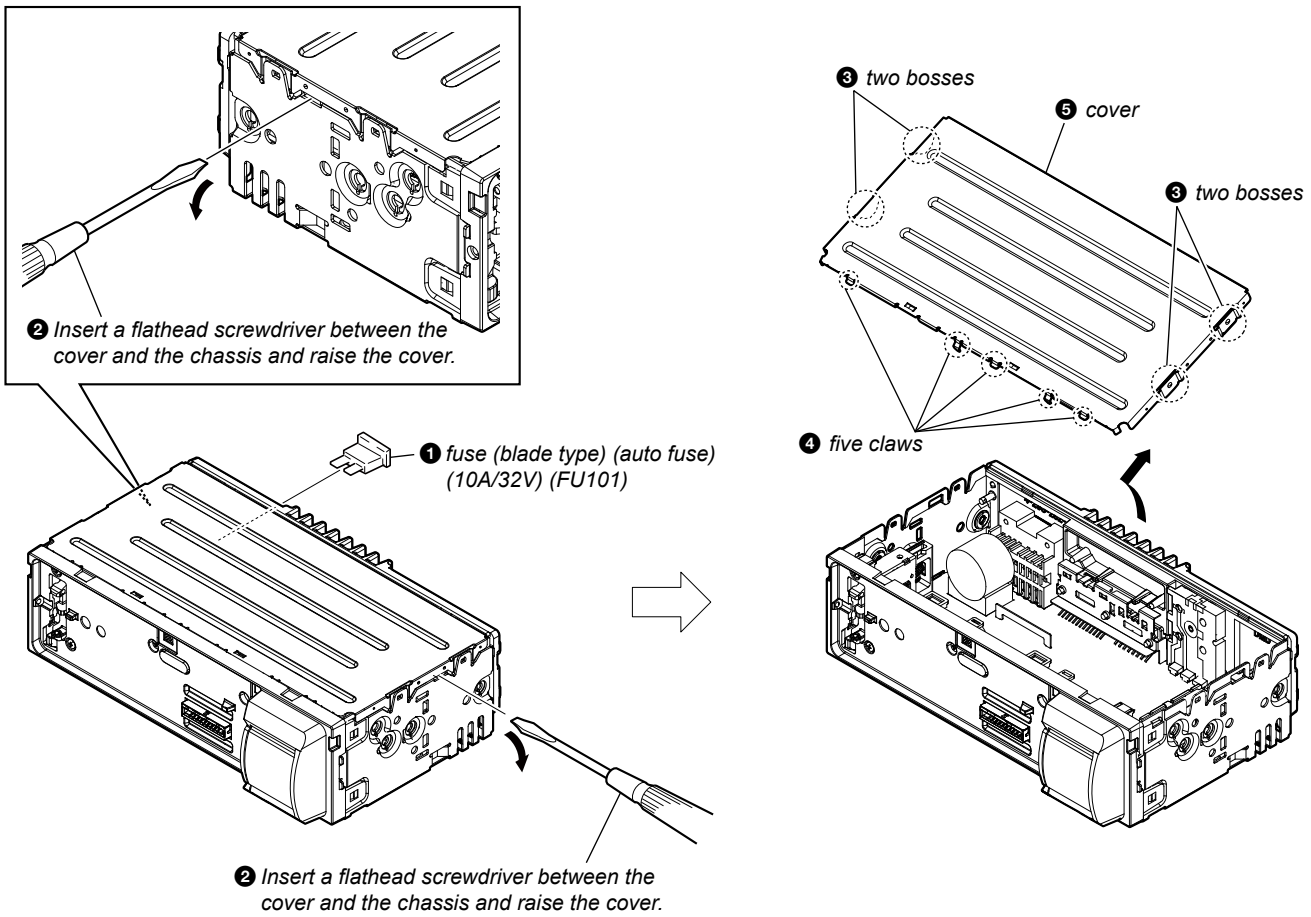
- This set can be disassembled in the order shown below.

3-1. DISASSEMBLY FLOW

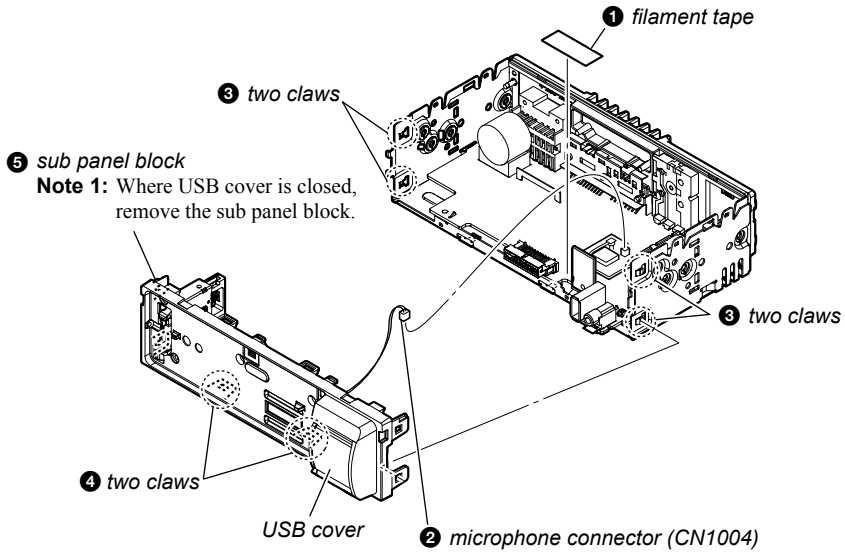


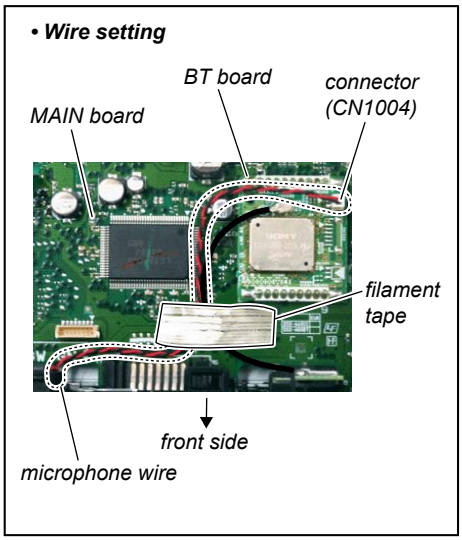
Note: Follow the disassembly procedure in the numerical order given.

3-2. FUSE (BLADE TYPE) (AUTO FUSE) (10A/32V) (FU101), COVER



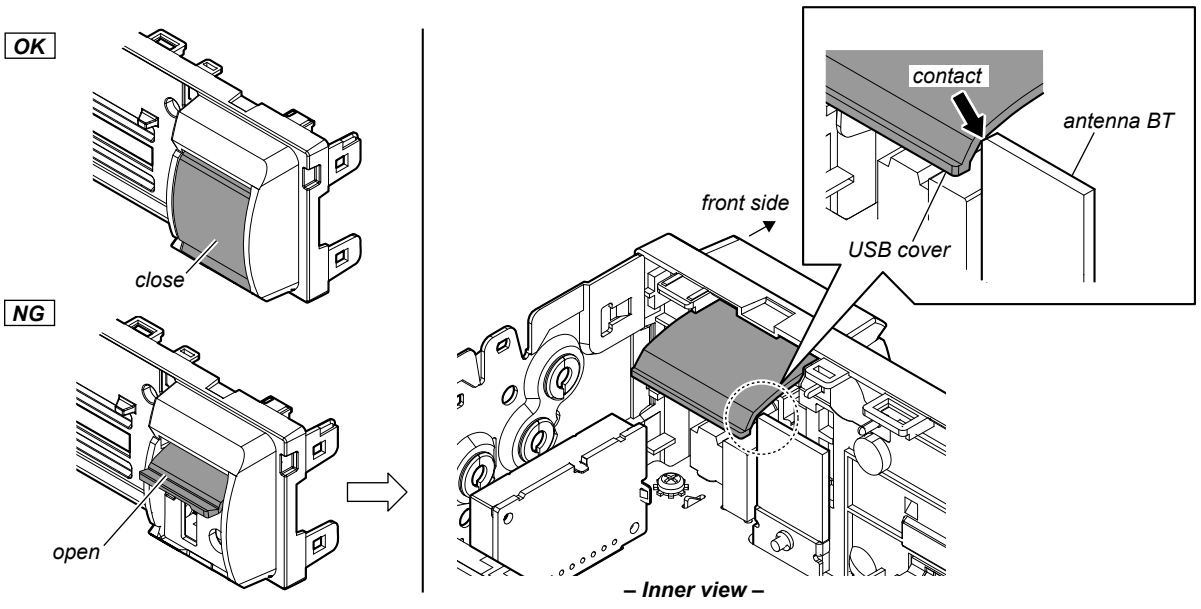
3-3. SUB PANEL BLOCK





• ***Attachment the sub panel block***

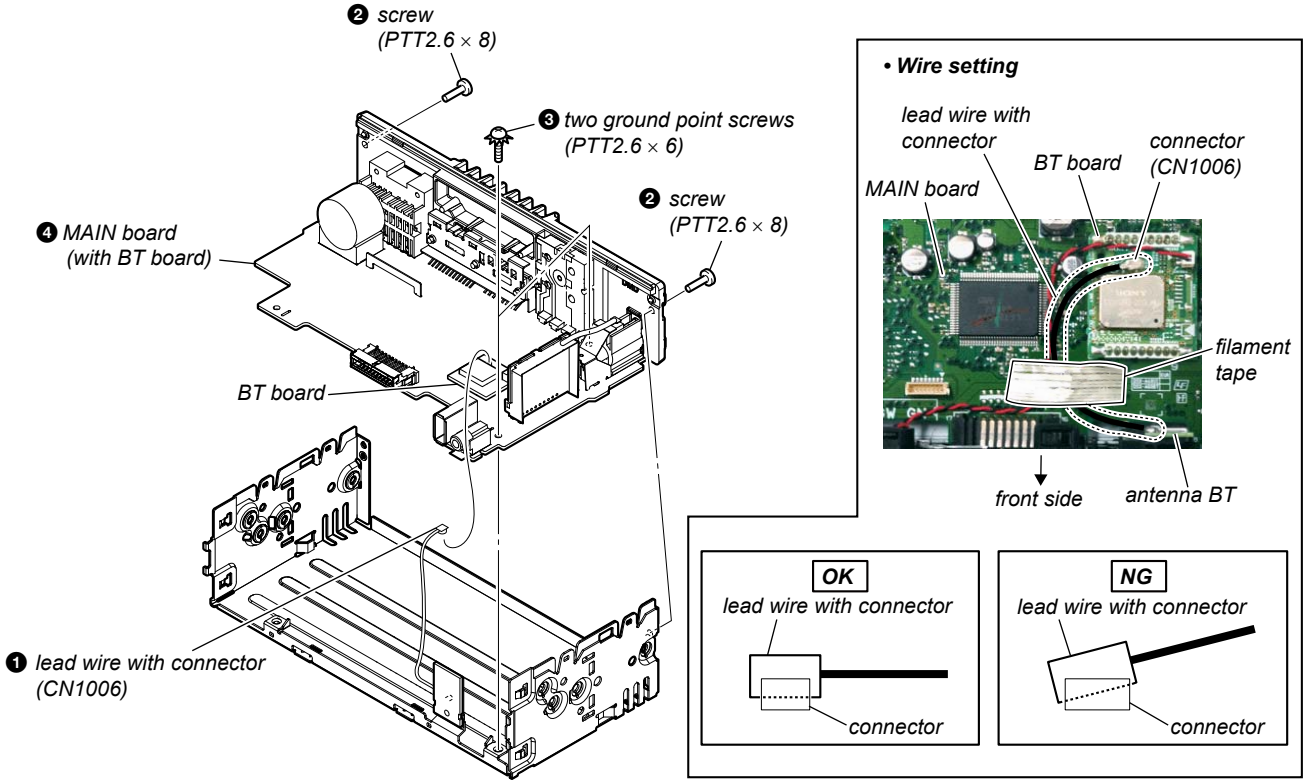
Note 2: Where USB cover is closed, attach the sub panel block. Antenna BT may be damaged, if it pushes in strongly where USB cover is opened.



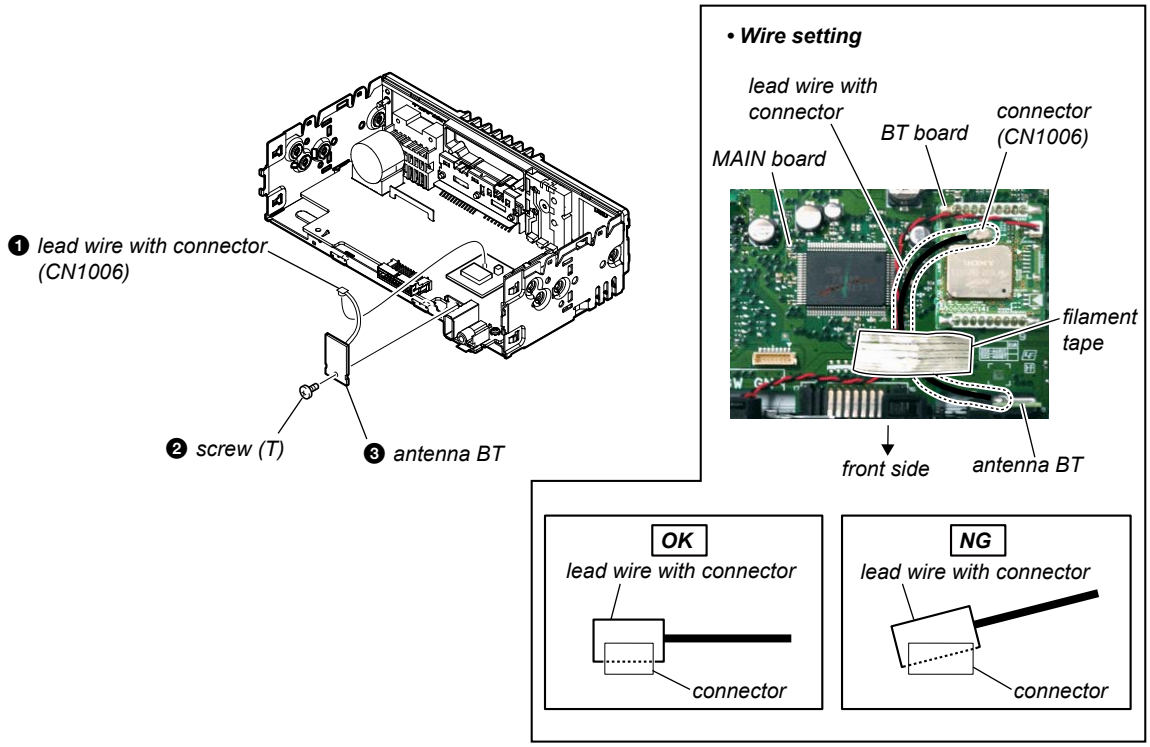
3-4. MAIN BOARD (WITH BT BOARD)

Note 1: When the complete MAIN board is replaced, it is necessary to confirm operation. Refer to "BLUETOOTH FUNCTION CHECKING METHOD USING A CELLULAR PHONE" on page 5.

Note 2: When the complete MAIN board is replaced, the destination setting is necessary. Refer to "NOTE OF REPLACING THE COMPLETE MAIN BOARD OR SYSTEM CONTROLLER (IC101)" on page 4.



3-5. ANTENNA BT



SECTION 4
TEST MODE

SETTING THE TEST MODE

Setting method:

1. In the state of source off (the clock is displayed on the liquid crystal display), enter the test mode by pressing the buttons on the remote commander in order of the [4] → [5] → [1] (press only the [1] button for two seconds).
2. It is set to the test mode, and all segments of the liquid crystal display light.

Releasing method:

Press the [SOURCE ⏻ OFF] button for 1 second.

MICROPHONE AUDIO LOOPBACK

To confirm the state of the internal microphone used when a handsfree function is used, the microphone audio is output from the speaker.
The breakdown judgment of the microphone can be done without connecting H/F with the cellular phone.

Procedure:

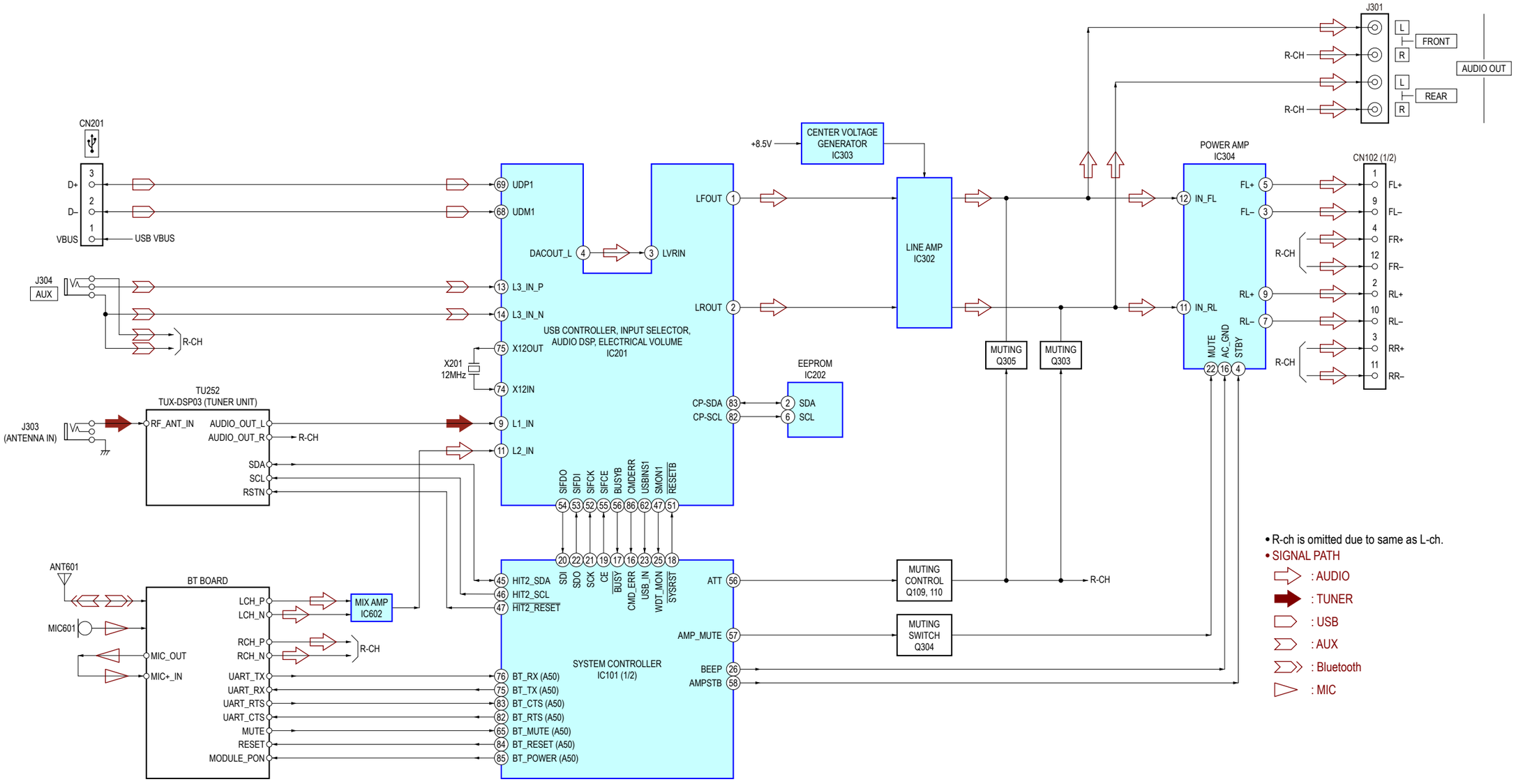
1. Enter the test mode.
2. Press the [SOURCE ⏻ OFF] button to select the Bluetooth Phone function.
3. On/off of the microphone audio loopback function changes whenever the [ALBUM ▲ 2] button is pressed (“ALBM” is displayed in the liquid crystal display).

LOOP BACK	ALBM
ON	Lit
OFF	None

MEMO

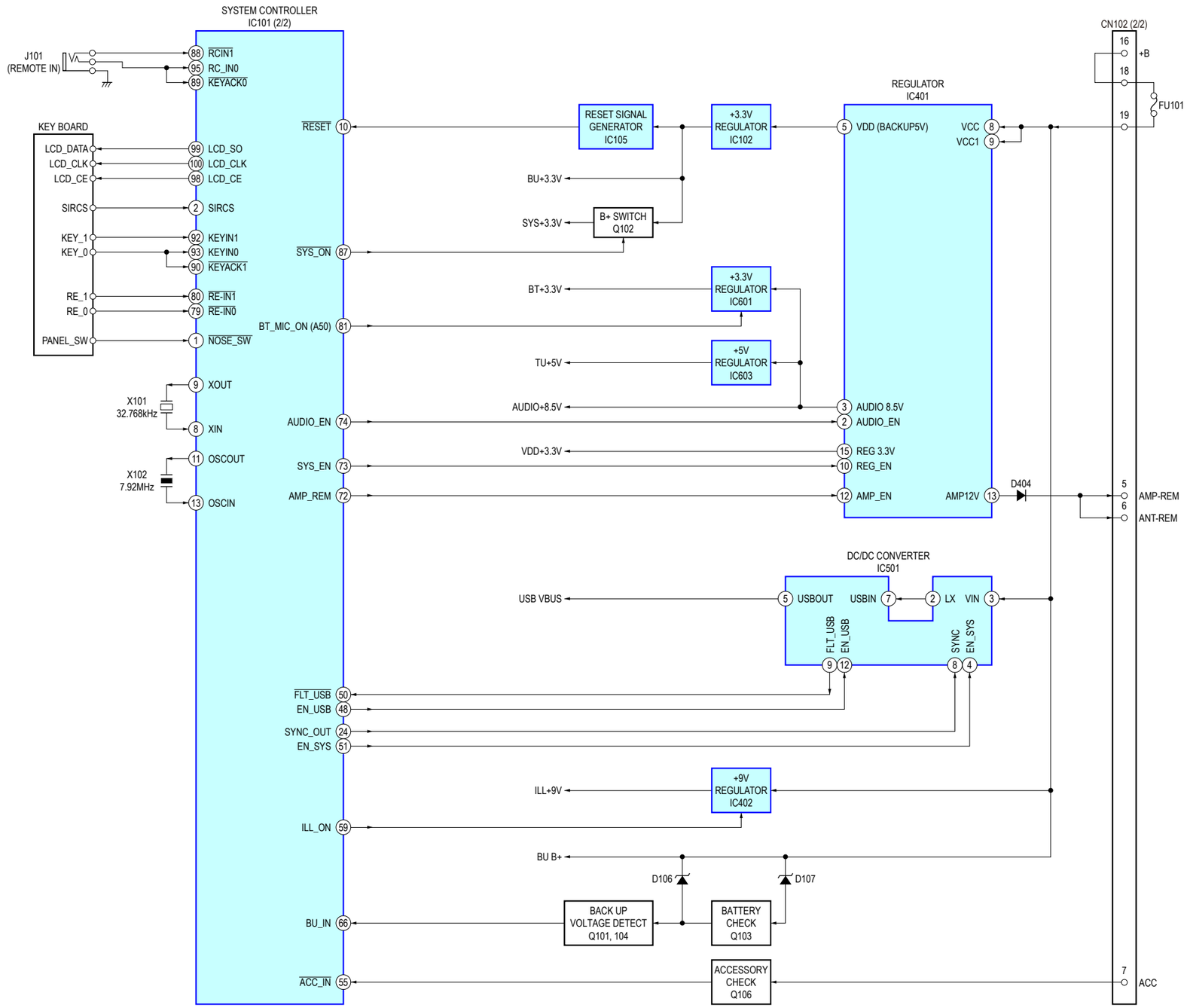
SECTION 5
DIAGRAMS

5-1. BLOCK DIAGRAM - MAIN Section -



- R-ch is omitted due to same as L-ch.
- SIGNAL PATH
  - : AUDIO
  - : TUNER
  - : USB
  - : AUX
  - : Bluetooth
  - : MIC

5-2. BLOCK DIAGRAM - DISPLAY/POWER SUPPLY Section -



THIS NOTE IS COMMON FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS.
(In addition to this, the necessary note is printed in each block.)

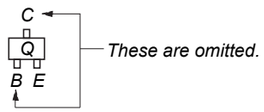
For Printed Wiring Boards.

Note:

- o——: Parts extracted from the component side.
- ——: Parts extracted from the conductor side.
- △ : Internal component.
- ▬ : Pattern from the side which enables seeing.
  (The other layers' patterns are not indicated.)

Caution:	
Pattern face side: (Conductor Side)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Component Side)	Parts on the parts face side seen from the parts face are indicated.

- Indication of transistor.



Note 1: When the complete MAIN board is replaced, the destination setting is necessary. Refer to "NOTE OF REPLACING THE COMPLETE MAIN BOARD OR SYSTEM CONTROLLER (IC101)" on page 4.

Note 2: When the complete MAIN board is replaced, it is necessary to confirm operation. Refer to "BLUETOOTH FUNCTION CHECKING METHOD USING A CELLULAR PHONE" on page 5.

For Schematic Diagrams.

Note:

- All capacitors are in µF unless otherwise noted. (p: pF) 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- △ : internal component.
- ▭ : panel designation.
- ▬ : B+ Line.
- Power voltages is dc 14.4V and fed with regulated dc power supply from ACC and BATT cords.
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark : TUNER (FM)
  ( ) : BT AUDIO
  [ ] : BT PHONE
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  ⇨ : AUDIO
  ➡ : TUNER
  ▷ : USB
  ▷ : AUX
  ▷▷ : Bluetooth
  ▷ : MIC

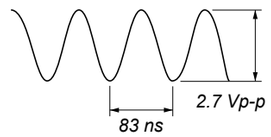
Note 1: When the complete MAIN board is replaced, the destination setting is necessary. Refer to "NOTE OF REPLACING THE COMPLETE MAIN BOARD OR SYSTEM CONTROLLER (IC101)" on page 4.

Note 2: When the complete MAIN board is replaced, it is necessary to confirm operation. Refer to "BLUETOOTH FUNCTION CHECKING METHOD USING A CELLULAR PHONE" on page 5.

- **Waveforms**

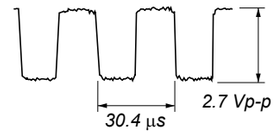
– MAIN Board –

① IC201 ㉕ (X12OUT)



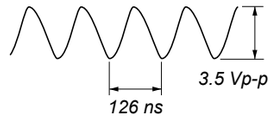
2 V/DIV, 50 ns/DIV

② IC101 ⑨ (XOUT)



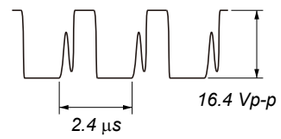
2 V/DIV, 20 µs/DIV

③ IC101 ⑪ (OSCOUT)



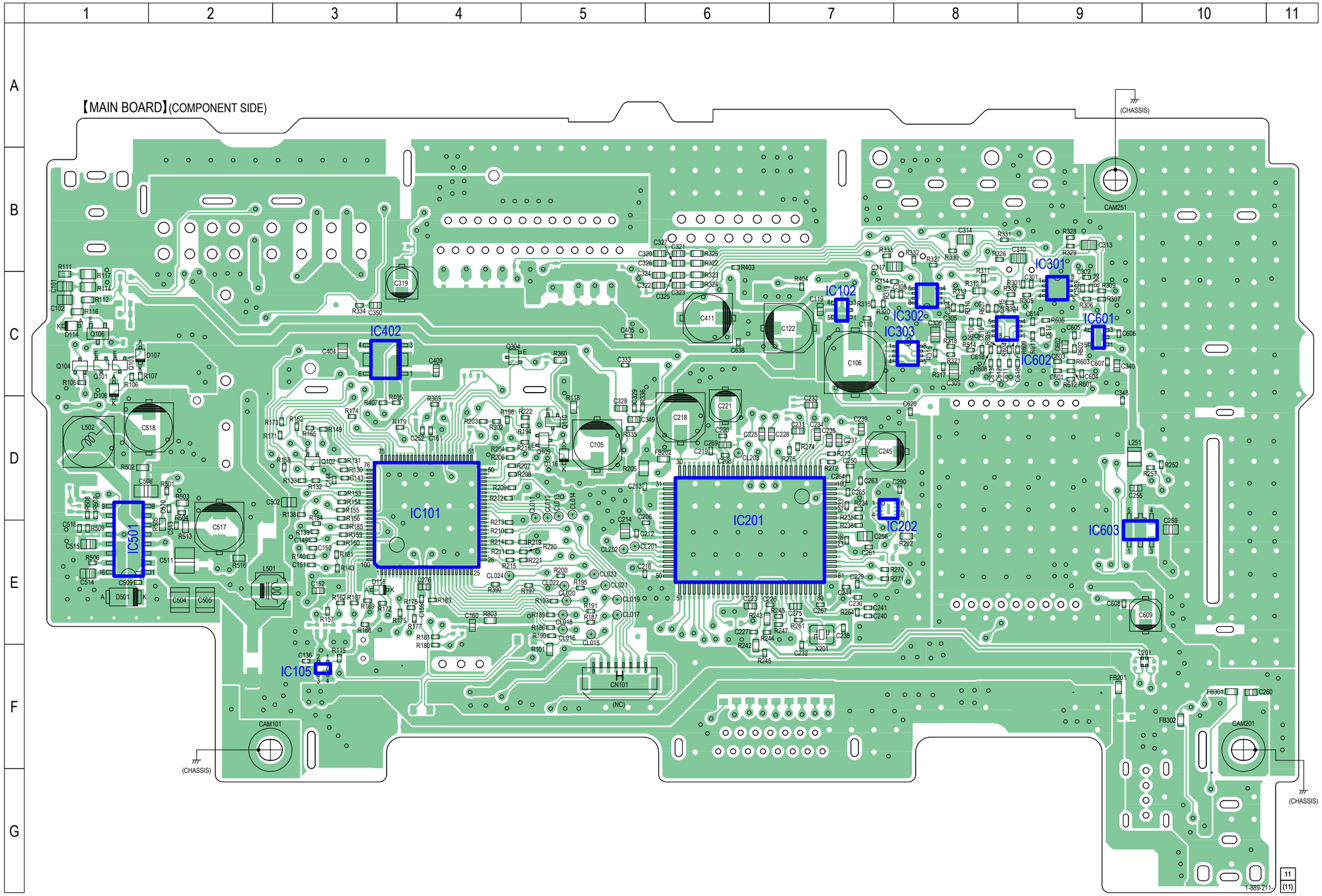
2 V/DIV, 50 ns/DIV

④ IC501 ① (BST)



10 V/DIV, 2 µs/DIV

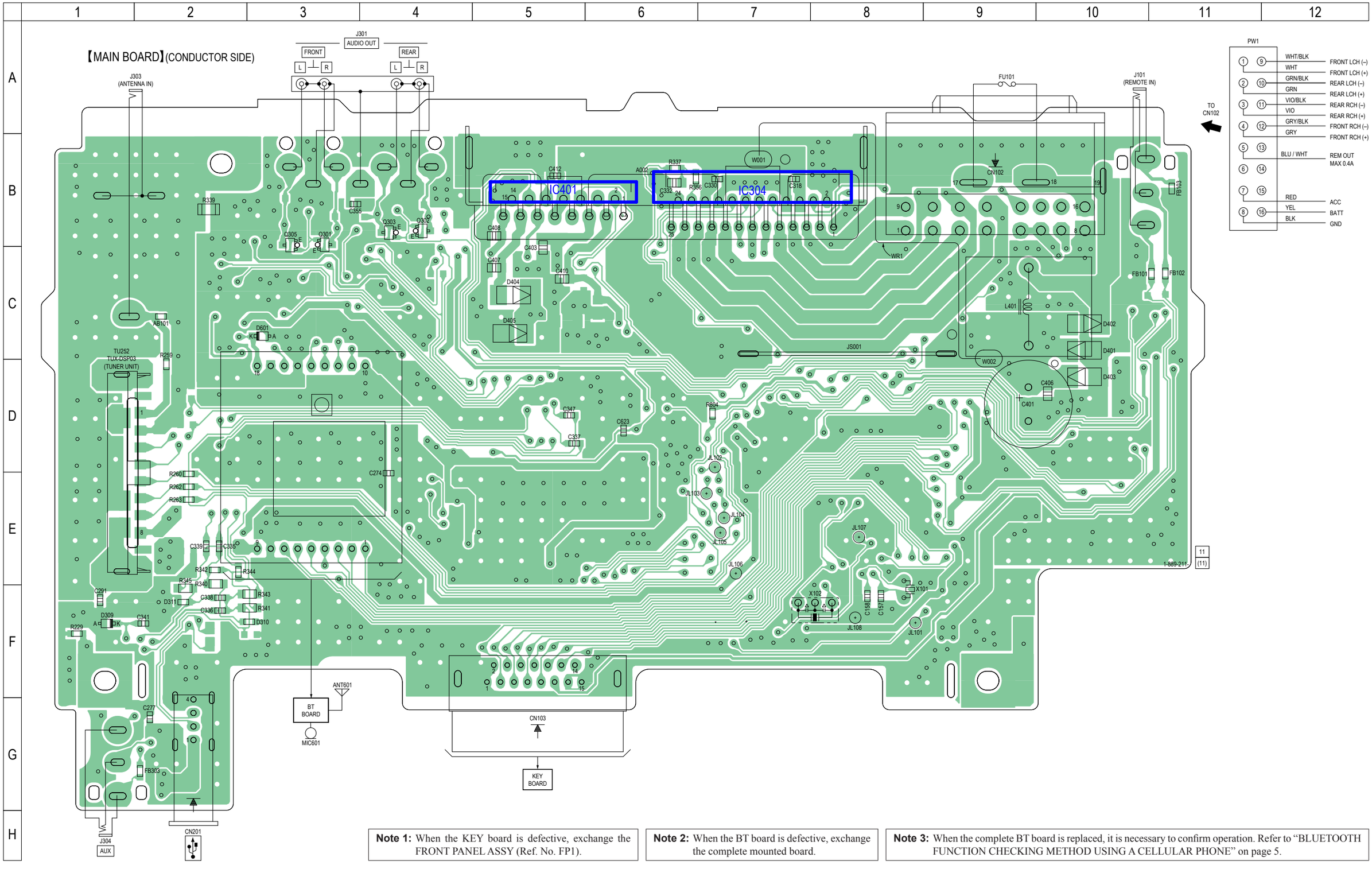
5-3. PRINTED WIRING BOARD - MAIN Section (1/2) - • : Uses unleaded solder.



Note 1: When IC101 on the MAIN board is replaced, the destination setting is necessary. Refer to "NOTE OF REPLACING THE COMPLETE MAIN BOARD OR SYSTEM CONTROLLER (IC101)" on page 4.

Note 2: IC603 on the MAIN board cannot exchange with single. When this part is damaged, exchange the complete mounted board.

5-4. PRINTED WIRING BOARDS - MAIN Section (2/2) - • : Uses unleaded solder.

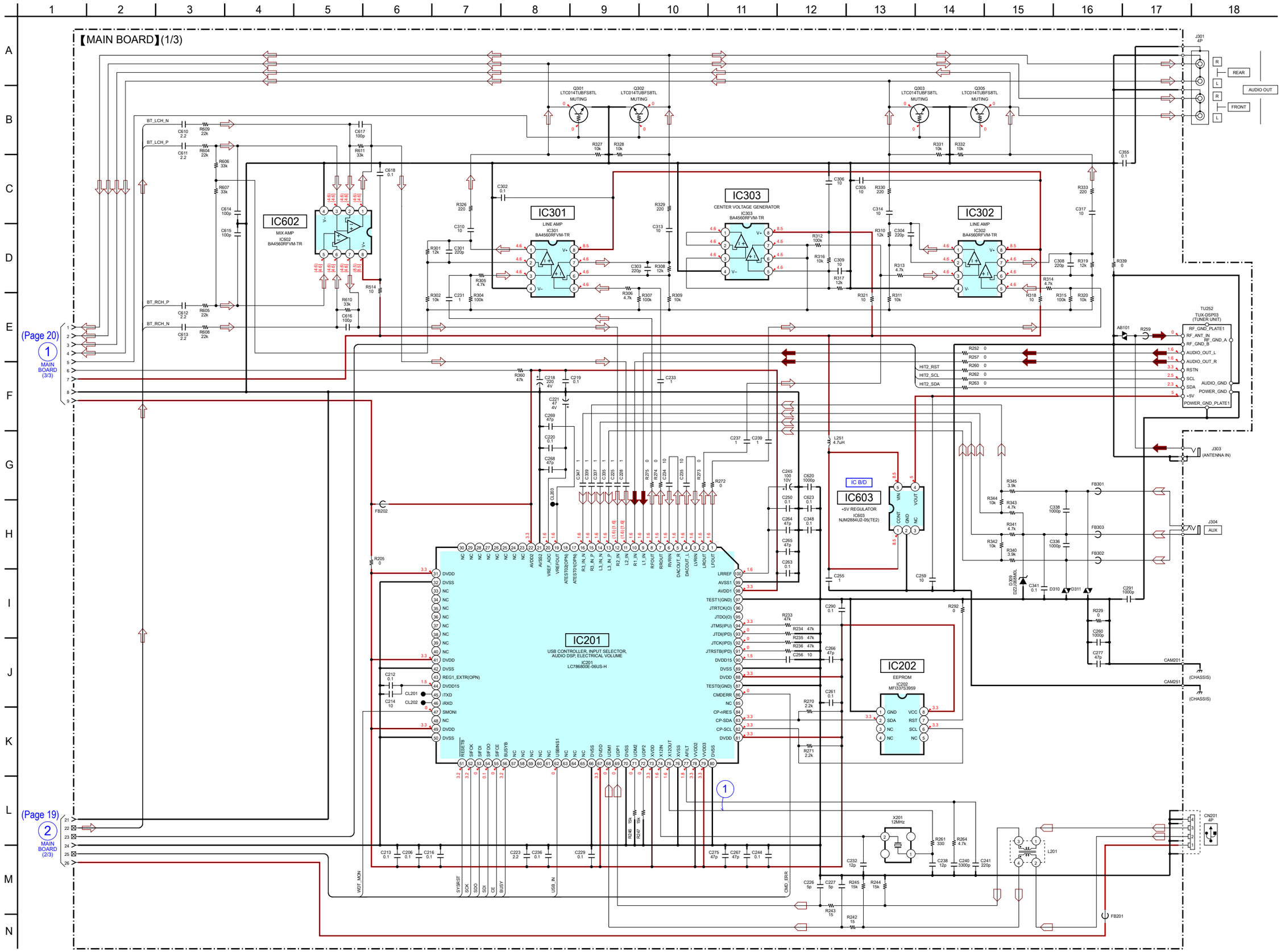


Note 1: When the KEY board is defective, exchange the FRONT PANEL ASSY (Ref. No. FP1).

Note 2: When the BT board is defective, exchange the complete mounted board.

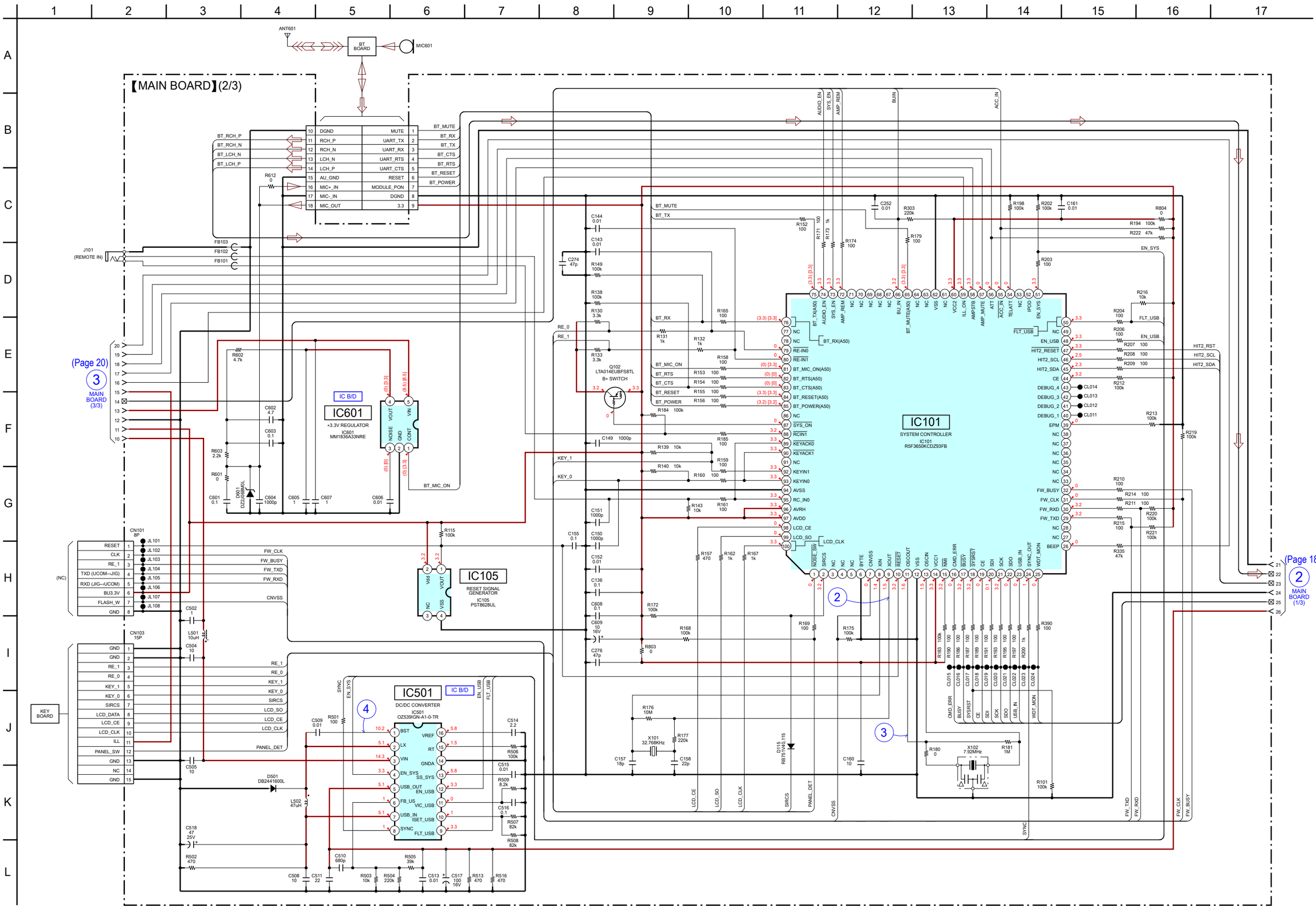
Note 3: When the complete BT board is replaced, it is necessary to confirm operation. Refer to “BLUETOOTH FUNCTION CHECKING METHOD USING A CELLULAR PHONE” on page 5.

5-5. SCHEMATIC DIAGRAM - MAIN Section (1/3) - • See page 15 for Waveforms. • See page 21 for IC Block Diagrams. • See page 23 for IC Pin Function Description.

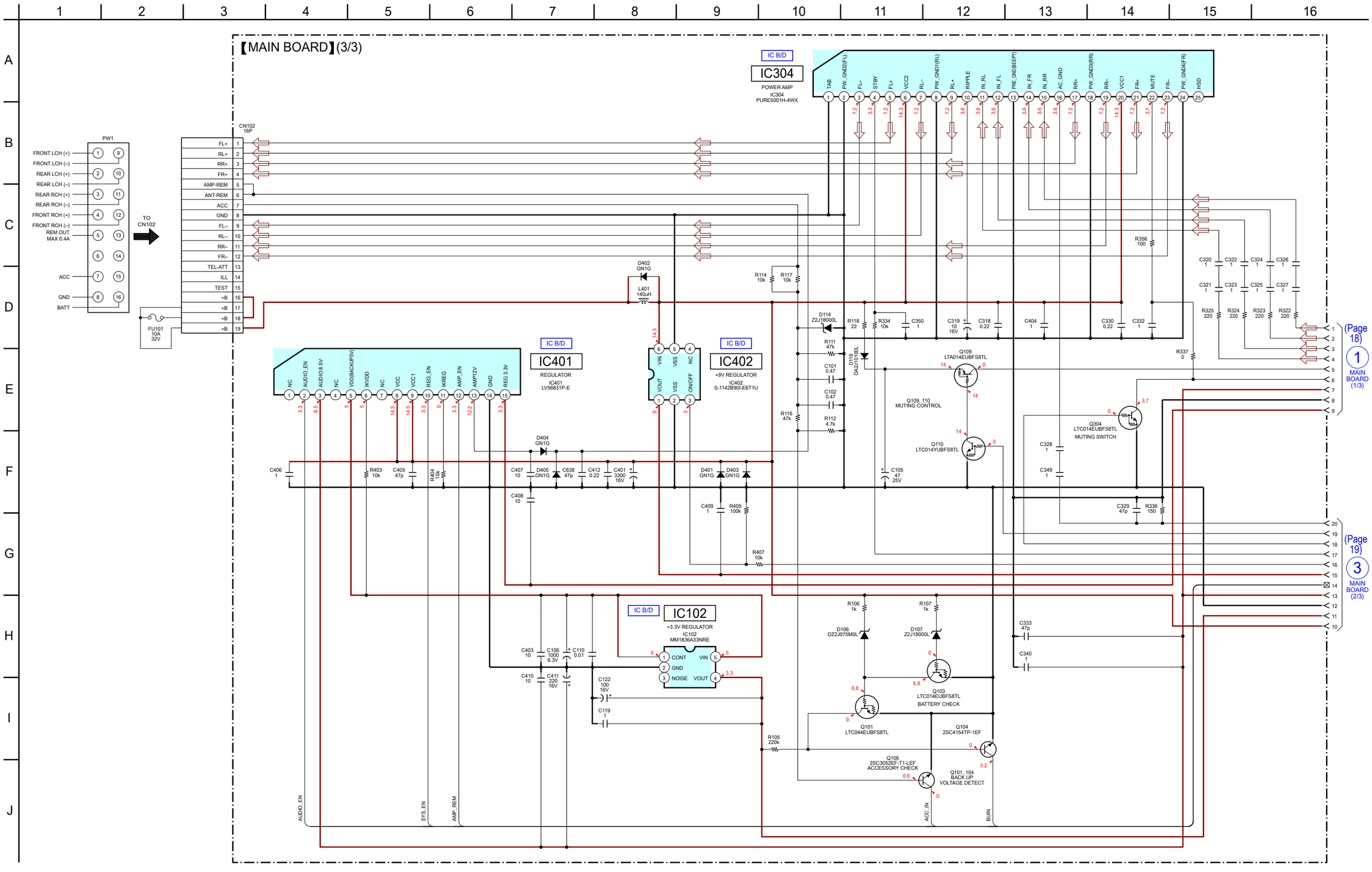


Note: IC603 on the MAIN board cannot exchange with single. When this part is damaged, exchange the complete mounted board.

5-6. SCHEMATIC DIAGRAM - MAIN Section (2/3) - • See page 15 for Waveforms. • See page 21 for IC Block Diagrams. • See page 23 for IC Pin Function Description.



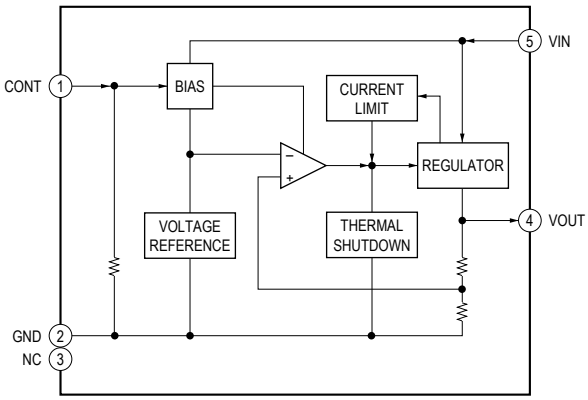
5-7. SCHEMATIC DIAGRAM - MAIN Section (3/3) - • See page 21 for IC Block Diagrams.



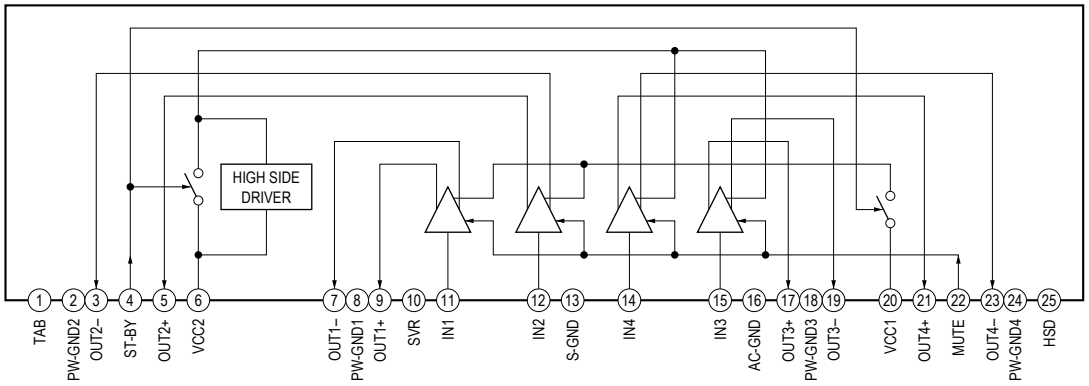
• **IC Block Diagrams**

– MAIN Board –

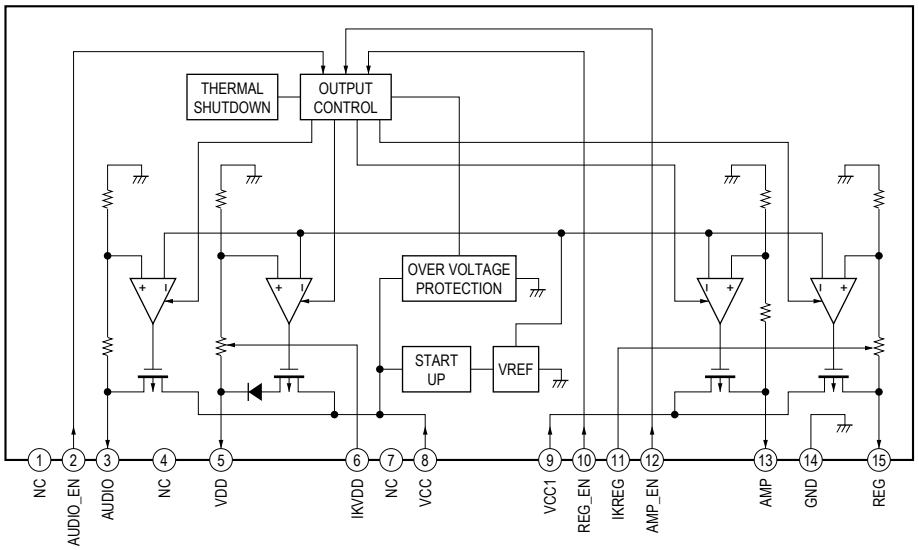
IC102, 601 MM1836A33NRE



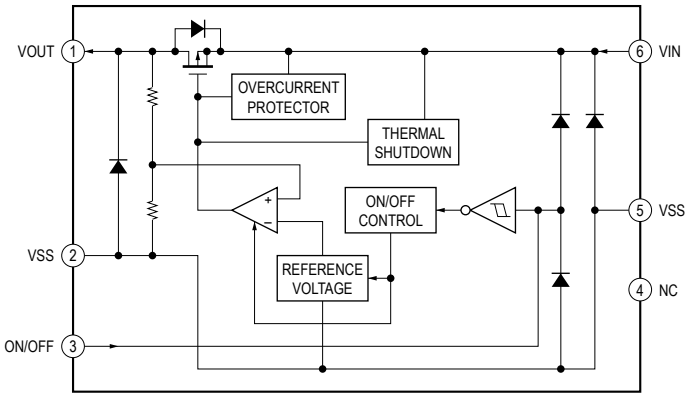
IC304 PURE5001H-4WX



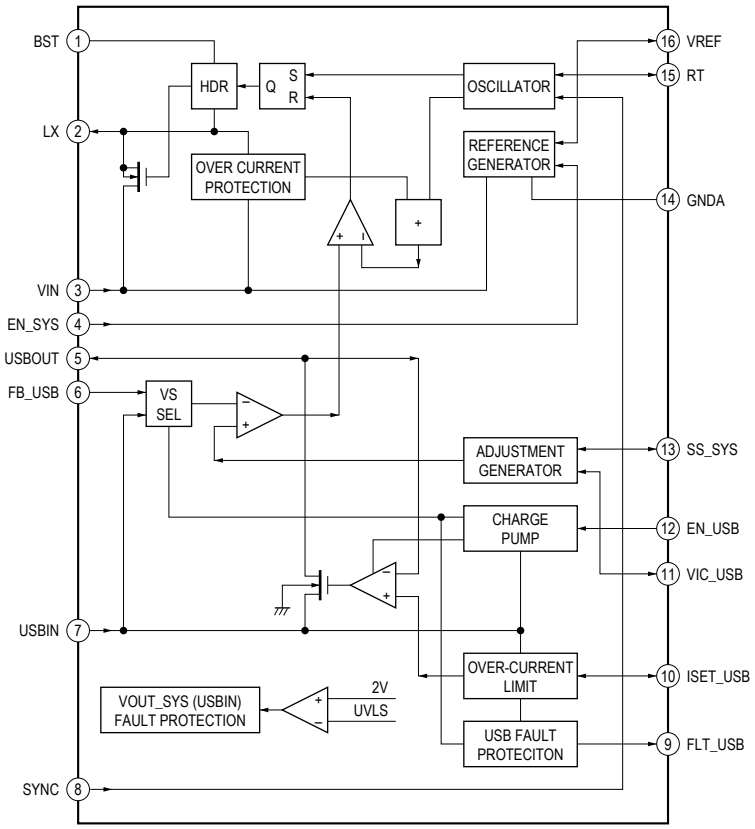
IC401 LV56831P-E



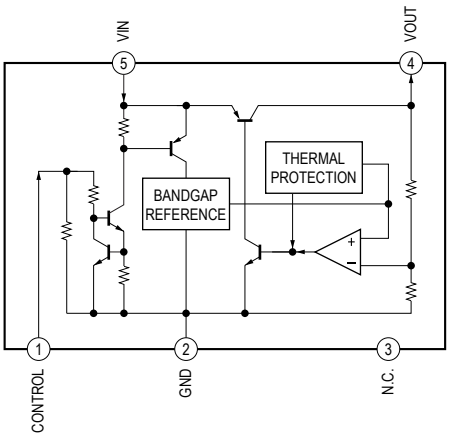
IC402 S-1142B90I-E6T1U



IC501 OZ539IGN-A1-0-TR



IC603 NJM2884U2-05 (TE2)



• **IC Pin Function Description**

MAIN BOARD IC101 R5F3650KCDZ93FB (SYSTEM CONTROLLER)

Pin No.	Pin Name	I/O	Description
1	$\overline{\text{NOSE_SW}}$	I	Front panel remove/attach detection signal input terminal "L": front panel is attached
2	SIRCS	I	Remote control signal input from the front panel block
3 to 5	NC	-	Not used
6	BYTE	I	External data bus width selection signal input terminal
7	CNVSS	I	Processor mode selection signal input terminal
8	XIN	I	Sub system clock input terminal (32.768 kHz)
9	XOUT	O	Sub system clock output terminal (32.768 kHz)
10	$\overline{\text{RESET}}$	I	System reset signal input from the reset signal generator "L": reset For several hundreds msec. after the power supply rises, "L" is input, then it change to "H"
11	OSCOUT	O	Main system clock output terminal (7.92 MHz)
12	VSS	-	Ground terminal
13	OSCIN	I	Main system clock input terminal (7.92 MHz)
14	VCC1	-	Power supply terminal (+3.3V)
15	$\overline{\text{NMI}}$	I	Non-maskable interrupt signal input terminal Fixed at "H" in this unit
16	CMD_ERR	I	Command error signal input from the audio DSP "H": error
17	$\overline{\text{BUSY}}$	I	Busy signal input from the audio DSP "L": busy
18	$\overline{\text{SYSRST}}$	O	Reset signal output to the audio DSP "L": reset
19	CE	O	Chip enable signal output to the audio DSP
20	SDI	I	Serial data input from the audio DSP
21	SCK	O	Serial data transfer clock signal output to the audio DSP
22	SDO	O	Serial data output to the audio DSP
23	USB_IN	I	USB device detection signal input from the audio DSP "L": USB device is connected
24	SYNC_OUT	O	Frequency control signal output to the DC/DC converter
25	WDT_MON	I	Watch-dog timer status monitor input from the audio DSP
26	BEEP	O	Beep sound output to the power amplifier
27, 28	NC	-	Not used
29	FW_TXD	O	Serial data output terminal for flash writing
30	FW_RXD	I	Serial data input terminal for flash writing
31	FW_CLK	I	Serial data transfer clock signal input terminal for flash writing
32	FW_BUSY	O	Busy signal output terminal for flash writing
33 to 38	NC	-	Not used
39	EPM	O	EPM signal output terminal Fixed at "L" in this unit
40 to 43	DEBUG_1 to DEBUG_4	O	Debug terminal Not used
44	CE	O	Chip enable signal output terminal Fixed at "H" in this unit
45	HIT2_SDA	I/O	Two-way serial data bus with the tuner unit
46	HIT2_SCL	O	Serial data transfer clock signal output to the tuner unit
47	$\overline{\text{HIT2_RESET}}$	O	Reset signal output to the tuner unit "L": reset
48	EN_USB	O	USB power on/off control signal output to the DC/DC converter "H": power on
49	NC	-	Not used
50	$\overline{\text{FLT_USB}}$	I	USB power fault status signal input from the DC/DC converter
51	EN_SYS	O	VBUS power on/off control signal output to the DC/DC converter "H": power on
52	IPOD	O	Not used
53	NC	-	Not used
54	TELATT	I	Telephone attenuator detection signal input terminal Fixed at "L" in this unit
55	$\overline{\text{ACC_IN}}$	I	Accessory power detection signal input terminal
56	ATT	O	Audio muting on/off control signal output terminal "H": muting on
57	AMP_MUTE	O	Amplifier muting on/off control signal output to the power amplifier "H": muting on
58	AMPSTB	O	Standby signal output to the power amplifier "L": standby
59	ILL_ON	O	Power on/off control signal output terminal for illumination LED "H": power on
60	VCC2	-	Power supply terminal (+3.3V)
61	NC	-	Not used
62	VSS	-	Ground terminal
63, 64	NC	-	Not used
65	BT_MUTE (A50)	I	Muting on/off control signal input from the Bluetooth section "H": muting on
66	BU_IN	I	Back-up power detection signal input terminal
67 to 71	NC	-	Not used

Pin No.	Pin Name	I/O	Description
72	AMP_REM	O	Amplifier remote output on/off control signal output terminal "H": output on
73	SYS_EN	O	System power on/off control signal output terminal "H": power on
74	AUDIO_EN	O	Power supply on/off control signal output terminal for audio section "H": power on
75	BT_TX (A50)	O	Serial data output to the Bluetooth section
76	BT_RX (A50)	I	Serial data input from the Bluetooth section
77, 78	NC	-	Not used
79	$\overline{\text{RE-IN0}}$	I	Jog dial pulse signal input from the rotary encoder (A phase input)
80	$\overline{\text{RE-IN1}}$	I	Jog dial pulse signal input from the rotary encoder (B phase input)
81	BT_MIC_ON (A50)	O	Power supply on/off control signal output terminal for microphone signal "H": power on
82	BT_RTS (A50)	O	Return to send signal output to the Bluetooth section
83	BT_CTS (A50)	I	Clear to send signal input from the Bluetooth section
84	BT_RESET (A50)	O	Reset signal output to the Bluetooth section "L": reset
85	BT_POWER (A50)	O	Power supply on/off control signal output to the Bluetooth section "H": power on
86	NC	-	Not used
87	$\overline{\text{SYS_ON}}$	O	System power on/off control signal output terminal "L": power on
88	$\overline{\text{RCIN1}}$	I	Rotary commander shift key input terminal
89	$\overline{\text{KEYACK0}}$	I	Key acknowledge signal (wake up signal) input from the rotary commander
90	$\overline{\text{KEYACK1}}$	I	Key acknowledge signal (wake up signal) input from the front panel block
91	NC	-	Not used
92, 93	KEYIN1, KEYIN0	I	Front panel key input terminal
94	AVSS	-	Ground terminal (for A/D converter)
95	RC_IN0	I	Rotary commander key input terminal
96	AVRH	-	Reference voltage terminal (+3.3V) (for A/D converter)
97	AVDD	-	Power supply terminal (+3.3V) (for A/D converter)
98	LCD_CE	O	Chip enable signal output to the front panel block
99	LCD_SO	O	Serial data output to the front panel block
100	LCD_CLK	O	Serial data transfer clock signal output to the front panel block

MAIN BOARD IC201 LC786800E-06US-H
(USB CONTROLLER, INPUT SELECTOR, AUDIO DSP, ELECTRICAL VOLUME)

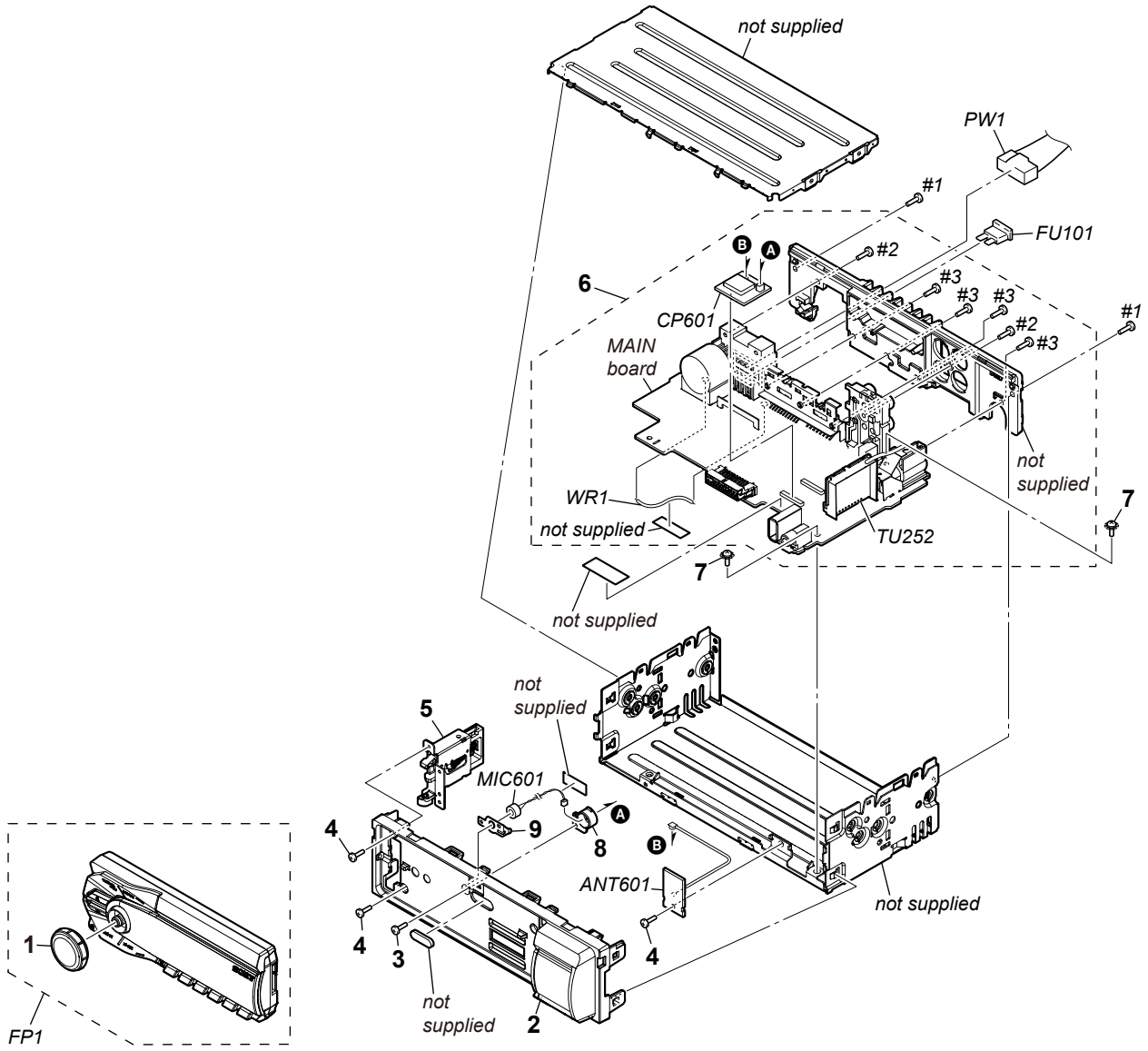
Pin No.	Pin Name	I/O	Description
1	LFOUT	O	Audio signal (front L-ch) output terminal
2	LROUT	O	Audio signal (rear L-ch) output terminal
3	LVRIN	I	Audio signal (L-ch) input terminal
4	DACOUT_L	O	Audio signal (L-ch) output terminal
5	DACOUT_R	O	Audio signal (R-ch) output terminal
6	RVRIN	I	Audio signal (R-ch) input terminal
7	RROUT	O	Audio signal (rear R-ch) output terminal
8	RFOUT	O	Audio signal (front R-ch) output terminal
9	L1_IN	I	Audio signal (tuner L-ch) input terminal
10	R1_IN	I	Audio signal (tuner R-ch) input terminal
11	L2_IN	I	Audio signal (Bluetooth L-ch) input terminal
12	R2_IN	I	Audio signal (Bluetooth R-ch) input terminal
13	L3_IN_P	I	Audio signal (AUX L-ch) input terminal (positive)
14	L3_IN_N	I	Audio signal (AUX L-ch) input terminal (negative)
15	R3_IN_P	I	Audio signal (AUX R-ch) input terminal (positive)
16	R3_IN_N	I	Audio signal (AUX R-ch) input terminal (negative)
17, 18	ATEST01 (OPN), ATEST02 (OPN)	-	Analog test terminal Not used
19	VREFOUT	O	External reference voltage output terminal
20	VREF_ADC	-	External capacitor connection terminal for audio A/D converter reference voltage
21	AVSS2	-	Ground terminal (for A/D converter)
22	AVDD2	-	Power supply terminal (+3.3V) (for A/D converter)
23 to 30	NC	-	Not used
31	DVDD	-	Power supply terminal (+3.3V) (for digital system)
32	DVSS	-	Ground terminal (for digital system)
33 to 40	NC	-	Not used
41	DVDD	-	Power supply terminal (+3.3V) (for digital system)
42	DVSS	-	Ground terminal (for digital system)
43	REG1_EXTR (OPN)	-	Internal regulator reserve terminal Not used
44	DVDD15	-	External capacitor connection terminal for internal regulator
45	iTXD	O	Serial data output terminal Not used
46	iRXD	I	Serial data input terminal Not used
47	SMONI	O	Watch-dog timer status monitor output to the system controller
48	NC	-	Not used
49	DVDD	-	Power supply terminal (+3.3V) (for digital system)
50	DVSS	-	Ground terminal (for digital system)
51	$\overline{\text{RESETB}}$	I	Reset signal input from the system controller "L": reset
52	SIFCK	I	Serial data transfer clock signal input from the system controller
53	SIFDI	I	Serial data input from the system controller
54	SIFDO	O	Serial data output to the system controller
55	SIFCE	I	Chip enable signal input from the system controller
56	BUSYB	O	Busy signal output to the system controller "L": busy
57 to 61	NC	-	Not used
62	USBINS1	O	USB device detection signal output to the system controller "L": USB device is connected
63 to 65	NC	-	Not used
66	DVSS	-	Ground terminal (for digital system)
67	DVDD	-	Power supply terminal (+3.3V) (for digital system)
68	UDM1	I/O	Two-way USB data (–) bus with the USB connector
69	UDP1	I/O	Two-way USB data (+) bus with the USB connector
70	DVSS	-	Ground terminal (for digital system)
71	UDM2	I/O	Two-way USB data (–) bus terminal Fixed at "L" in this unit
72	UDP2	I/O	Two-way USB data (+) bus terminal Fixed at "L" in this unit
73	XVDD	-	Power supply terminal (+3.3V) (for oscillation circuit)
74	X12IN	I	System clock input terminal (12 MHz)
75	X12OUT	O	System clock output terminal (12 MHz)
76	XVSS	-	Ground terminal (for oscillation circuit)
77	AFILT	O	Charge pump output terminal (for audio PLL)

Pin No.	Pin Name	I/O	Description
78, 79	VVDD2, VVDD3	-	Power supply terminal (+3.3V) (for PLL)
80	DVSS	-	Ground terminal (for digital system)
81	DVDD	-	Power supply terminal (+3.3V) (for digital system)
82	CP-SCL	O	Serial data transfer clock signal output to the EEPROM
83	CP-SDA	I/O	Two-way serial data bus with the EEPROM
84	CP-nRES	O	Reset signal output terminal Not used
85	NC	-	Not used
86	CMDERR	O	Command error signal output to the system controller "H": error
87	TEST0 (GND)	I	Test mode setting terminal Fixed at "L"
88	DVDD	-	Power supply terminal (+3.3V) (for digital system)
89	DVSS	-	Ground terminal (for digital system)
90	DVDD15	-	External capacitor connection terminal for internal regulator
91	JTRSTB (IPD)	I	Reset signal input terminal (for JTAG) Normally: fixed at "L"
92	JTCK (IPD)	I	Clock signal input terminal (for JTAG) Normally: fixed at "L"
93	JTDI (IPD)	I	Data input terminal (for JTAG) Normally: fixed at "L"
94	JTMS (IPU)	I	Mode selection signal input terminal (for JTAG) Normally: fixed at "H"
95	JTDO (O)	O	Data output terminal (for JTAG) Normally: open
96	JTRTCK (O)	O	Return clock signal output terminal (for JTAG) Normally: open
97	TEST1 (GND)	I	Test mode setting terminal Fixed at "L"
98	AVDD1	-	Power supply terminal (+3.3V) (for A/D converter)
99	AVSS1	-	Ground terminal (for A/D converter)
100	LRREF	-	External capacitor connection terminal for audio D/A converter and electrical volume reference voltage

SECTION 6
EXPLODED VIEW

Note:

- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Color Indication of Appearance Parts Example:
  KNOB, BALANCE (WHITE) . . . (RED)
  ↑ Parts Color ↑ Cabinet's Color



Note 1: When the complete BT board or complete MAIN board is replaced, it is necessary to confirm operation. Refer to "BLUETOOTH FUNCTION CHECKING METHOD USING A CELLULAR PHONE" on page 5.

Note 2: When the complete MAIN board is replaced, the destination setting is necessary. Refer to "NOTE OF REPLACING THE COMPLETE MAIN BOARD OR SYSTEM CONTROLLER (IC101)" on page 4.

Ref. No.	Part No.	Description	Remark
1	X-2582-973-1	KNOB (VOL) (SV) ASSY	
2	X-2583-287-1	PANEL ASSY, SUB	
3	4-290-177-01	SCREW (+B P-TITE M2)	
4	3-042-244-11	SCREW (T)	
5	X-2547-583-4	LOCK ASSY (T)	
6	A-1981-910-A	MAIN BOARD, COMPLETE (Including BT board)	(See Note 1, 2)
7	4-410-504-01	SCREW (+PTT 2.6X6), GROUND POINT	
8	2-898-980-02	HOLDER (MIC SLOT)	
9	X-2580-124-1	PLATE (MIC SLOT) (SV) ASSY	
ANT601	1-754-894-11	BT, ANTENNA	

Ref. No.	Part No.	Description	Remark
CP601	A-1847-637-A	BT BOARD, COMPLETE (Included in MAIN board)	(See Note 1)
FP1	A-1978-124-A	PANEL ASSY, FRONT	
FU101	1-532-877-11	FUSE (BLADE TYPE) (AUTO FUSE) (10 A/32 V)	
MIC601	1-542-919-11	MICROPHONE	
PW1	1-846-997-11	CONNECTION CABLE, AUTOMOBILE (POWER)	
TU252	A-1946-531-A	TUX-DSP03 (TUNER UNIT)	
WR1	1-848-009-11	WIRE, PVC UL1569 AWG18 YEL L53	
#1	7-685-793-01	SCREW +PTT 2.6X8 (S)	
#2	7-685-134-19	SCREW +P 2.6X8 TYPE2 NON-SLIT	
#3	7-685-794-01	SCREW +PTT 2.6X10 (S)	

BT KEY MAIN

SECTION 7
ELECTRICAL PARTS LIST

Note:
- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- RESISTORS
  All resistors are in ohms.
  METAL: Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F: nonflammable
- CAPACITORS
  uF: µF
- COILS
  uH: µH
- SEMICONDUCTORS
  In each case, u: µ, for example:
  uA. . : µA. . , uPA. . , µPA. . ,
  uPB. . : µPB. . , uPC. . , µPC. . ,
  uPD. . : µPD. .

When indicating parts by reference number, please include the board name.

Ref. No.	Part No.	Description			Remark
	A-1847-637-A	BT BOARD, COMPLETE (Included in MAIN board) (See Note 1)			
		**********			
When the BT board is defective, exchange the complete mounted board.					
**********					
		KEY BOARD			
		**********			
When the KEY board is defective, exchange the FRONT PANEL ASSY (Ref. No. FP1).					
**********					
	A-1981-910-A	MAIN BOARD, COMPLETE (Including BT board) (See Note 1, 2)			
		**********			
	7-685-134-19	SCREW +P 2.6X8 TYPE2 NON-SLIT			
	7-685-794-01	SCREW +PTT 2.6X10 (S)			
		< SURGE ABSORBER >			
AB101	1-805-043-11	ABSORBER, CHIP SURGE			
		< CAPACITOR >			
C101	1-114-329-11	CERAMIC CHIP	0.47uF	10%	50V
C102	1-114-329-11	CERAMIC CHIP	0.47uF	10%	50V
C105	1-128-992-21	ELECT CHIP	47uF	20%	25V
C106	1-100-588-21	ELECT CHIP	1000uF	20%	6.3V
C110	1-100-567-81	CERAMIC CHIP	0.01uF	10%	25V
C119	1-165-908-11	CERAMIC CHIP	1uF	10%	10V
C122	1-135-366-11	ELECT CHIP	100uF	20%	16V
C136	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C143	1-100-567-81	CERAMIC CHIP	0.01uF	10%	25V
C144	1-100-567-81	CERAMIC CHIP	0.01uF	10%	25V
C149	1-164-937-11	CERAMIC CHIP	0.001uF	10%	50V
C150	1-164-937-11	CERAMIC CHIP	0.001uF	10%	50V
C151	1-164-937-11	CERAMIC CHIP	0.001uF	10%	50V
C152	1-118-345-11	CERAMIC CHIP	0.01uF	10%	25V
C155	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C157	1-162-918-11	CERAMIC CHIP	18PF	5%	50V
C158	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
* C160	1-116-720-11	CERAMIC CHIP	10uF	20%	6.3V
C161	1-100-567-81	CERAMIC CHIP	0.01uF	10%	25V
C206	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C212	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C213	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C214	1-100-966-91	CERAMIC CHIP	10uF	20%	10V
C216	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C218	1-126-210-21	ELECT CHIP	220uF	20%	4V
C219	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C220	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C221	1-126-208-21	ELECT CHIP	47uF	20%	4V
C223	1-100-742-91	CERAMIC CHIP	2.2uF	20%	10V
C225	1-112-298-91	CERAMIC CHIP	1uF	10%	16V
C226	1-164-845-11	CERAMIC CHIP	5PF	0.25PF	50V
C227	1-164-845-11	CERAMIC CHIP	5PF	0.25PF	50V
C228	1-112-298-91	CERAMIC CHIP	1uF	10%	16V
C229	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C231	1-112-298-91	CERAMIC CHIP	1uF	10%	16V
C232	1-164-852-11	CERAMIC CHIP	12PF	5%	50V
C233	1-112-298-91	CERAMIC CHIP	1uF	10%	16V
* C234	1-116-720-11	CERAMIC CHIP	10uF	20%	6.3V
* C235	1-116-720-11	CERAMIC CHIP	10uF	20%	6.3V
C236	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C237	1-112-298-91	CERAMIC CHIP	1uF	10%	16V
C238	1-164-852-11	CERAMIC CHIP	12PF	5%	50V
C239	1-112-298-91	CERAMIC CHIP	1uF	10%	16V
C240	1-164-940-11	CERAMIC CHIP	0.0033uF	10%	16V
C241	1-164-882-11	CERAMIC CHIP	220PF	5%	16V
C244	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C245	1-165-492-21	ELECT CHIP	100uF	20%	10V
C250	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C252	1-100-567-81	CERAMIC CHIP	0.01uF	10%	25V
C255	1-112-781-11	CERAMIC CHIP	1uF	10%	10V
C256	1-100-966-91	CERAMIC CHIP	10uF	20%	10V
C259	1-100-909-11	CERAMIC CHIP	10uF	10%	6.3V
C260	1-118-290-11	CERAMIC CHIP	0.001uF	10%	50V
C261	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C263	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C264	1-164-866-11	CERAMIC CHIP	47PF	5%	50V
C265	1-164-866-11	CERAMIC CHIP	47PF	5%	50V
C266	1-164-866-11	CERAMIC CHIP	47PF	5%	50V
C267	1-164-866-11	CERAMIC CHIP	47PF	5%	50V
C268	1-164-866-11	CERAMIC CHIP	47PF	5%	50V
C269	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C274	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C275	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C276	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C277	1-162-923-11	CERAMIC CHIP	47PF	5%	50V

Note 1: When the complete BT board or complete MAIN board is replaced, it is necessary to confirm operation. Refer to "BLUETOOTH FUNCTION CHECKING METHOD USING A CELLULAR PHONE" on page 5.

Note 2: When the complete MAIN board is replaced, the destination setting is necessary. Refer to "NOTE OF REPLACING THE COMPLETE MAIN BOARD OR SYSTEM CONTROLLER (IC101)" on page 4.

Ref. No.	Part No.	Description			Remark
C290	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C291	1-118-290-11	CERAMIC CHIP	0.001uF	10%	50V
C301	1-164-882-11	CERAMIC CHIP	220PF	5%	16V
C302	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C303	1-164-882-11	CERAMIC CHIP	220PF	5%	16V
C304	1-164-882-11	CERAMIC CHIP	220PF	5%	16V
C305	1-114-419-21	CERAMIC CHIP	10uF	10%	16V
C306	1-114-419-21	CERAMIC CHIP	10uF	10%	16V
C308	1-164-882-11	CERAMIC CHIP	220PF	5%	16V
C309	1-100-966-91	CERAMIC CHIP	10uF	20%	10V
C310	1-100-966-91	CERAMIC CHIP	10uF	20%	10V
C313	1-100-966-91	CERAMIC CHIP	10uF	20%	10V
C314	1-100-966-91	CERAMIC CHIP	10uF	20%	10V
C317	1-100-966-91	CERAMIC CHIP	10uF	20%	10V
C318	1-114-326-11	CERAMIC CHIP	0.22uF	10%	25V
C319	1-100-765-21	ELECT CHIP	10uF	20%	16V
C320	1-114-813-11	CERAMIC CHIP	1uF	10%	16V
C321	1-114-813-11	CERAMIC CHIP	1uF	10%	16V
C322	1-114-813-11	CERAMIC CHIP	1uF	10%	16V
C323	1-114-813-11	CERAMIC CHIP	1uF	10%	16V
C324	1-114-813-11	CERAMIC CHIP	1uF	10%	16V
C325	1-114-813-11	CERAMIC CHIP	1uF	10%	16V
C326	1-114-813-11	CERAMIC CHIP	1uF	10%	16V
C327	1-114-813-11	CERAMIC CHIP	1uF	10%	16V
C328	1-114-813-11	CERAMIC CHIP	1uF	10%	16V
C329	1-164-866-11	CERAMIC CHIP	47PF	5%	50V
C330	1-114-326-11	CERAMIC CHIP	0.22uF	10%	25V
C332	1-100-591-91	CERAMIC CHIP	1uF	10%	25V
C333	1-164-866-11	CERAMIC CHIP	47PF	5%	50V
C335	1-165-908-11	CERAMIC CHIP	1uF	10%	10V
C336	1-118-290-11	CERAMIC CHIP	0.001uF	10%	50V
C337	1-165-908-11	CERAMIC CHIP	1uF	10%	10V
C338	1-118-290-11	CERAMIC CHIP	0.001uF	10%	50V
C339	1-165-908-11	CERAMIC CHIP	1uF	10%	10V
C340	1-112-298-91	CERAMIC CHIP	1uF	10%	16V
C341	1-118-361-11	CERAMIC CHIP	0.1uF	10%	50V
C347	1-165-908-11	CERAMIC CHIP	1uF	10%	10V
C348	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C349	1-114-813-11	CERAMIC CHIP	1uF	10%	16V
C350	1-114-813-11	CERAMIC CHIP	1uF	10%	16V
C355	1-118-361-11	CERAMIC CHIP	0.1uF	10%	50V
C401	1-118-067-11	ELECT	3300uF	20%	16V
C403	1-100-966-91	CERAMIC CHIP	10uF	20%	10V
C404	1-100-591-91	CERAMIC CHIP	1uF	10%	25V
C405	1-164-866-11	CERAMIC CHIP	47PF	5%	50V
C406	1-100-591-91	CERAMIC CHIP	1uF	10%	25V
C407	1-114-419-21	CERAMIC CHIP	10uF	10%	16V
C408	1-100-966-91	CERAMIC CHIP	10uF	20%	10V
C409	1-100-352-91	CERAMIC CHIP	1uF	20%	16V
C410	1-114-419-21	CERAMIC CHIP	10uF	10%	16V
C411	1-100-767-21	ELECT CHIP	220uF	20%	16V
C412	1-114-326-11	CERAMIC CHIP	0.22uF	10%	25V
C502	1-100-591-91	CERAMIC CHIP	1uF	10%	25V
C504	1-114-334-11	CERAMIC CHIP	10uF	10%	25V
C505	1-114-334-11	CERAMIC CHIP	10uF	10%	25V
C508	1-100-672-11	CERAMIC CHIP	10uF	20%	16V
C509	1-164-943-81	CERAMIC CHIP	0.01uF	10%	16V
C510	1-164-936-11	CERAMIC CHIP	680PF	10%	50V
C511	1-100-055-21	CERAMIC CHIP	22uF	20%	16V
C513	1-100-567-81	CERAMIC CHIP	0.01uF	10%	25V

Ref. No.	Part No.	Description			Remark
C514	1-114-330-11	CERAMIC CHIP	2.2uF	10%	16V
C515	1-112-034-91	CERAMIC CHIP	0.01uF	5%	50V
C516	1-114-582-91	CERAMIC CHIP	0.1uF	10%	16V
C517	1-117-681-11	ELECT CHIP	100uF	20%	16V
C518	1-128-992-21	ELECT CHIP	47uF	20%	25V
C601	1-114-582-91	CERAMIC CHIP	0.1uF	10%	16V
C602	1-112-746-11	CERAMIC CHIP	4.7uF	10%	6.3V
C603	1-114-582-91	CERAMIC CHIP	0.1uF	10%	16V
C604	1-164-937-11	CERAMIC CHIP	0.001uF	10%	50V
C605	1-118-462-11	CERAMIC CHIP	1uF	10%	10V
C606	1-100-567-81	CERAMIC CHIP	0.01uF	10%	25V
C607	1-118-462-11	CERAMIC CHIP	1uF	10%	10V
C608	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C609	1-124-779-00	ELECT CHIP	10uF	20%	16V
C610	1-116-390-91	CERAMIC CHIP	2.2uF	20%	6.3V
C611	1-116-390-91	CERAMIC CHIP	2.2uF	20%	6.3V
C612	1-116-390-91	CERAMIC CHIP	2.2uF	20%	6.3V
C613	1-116-390-91	CERAMIC CHIP	2.2uF	20%	6.3V
C614	1-164-874-11	CERAMIC CHIP	100PF	5%	50V
C615	1-164-874-11	CERAMIC CHIP	100PF	5%	50V
C616	1-164-874-11	CERAMIC CHIP	100PF	5%	50V
C617	1-164-874-11	CERAMIC CHIP	100PF	5%	50V
C618	1-125-777-11	CERAMIC CHIP	0.1uF	10%	10V
C620	1-164-937-11	CERAMIC CHIP	0.001uF	10%	50V
C623	1-118-361-11	CERAMIC CHIP	0.1uF	10%	50V
C638	1-164-866-11	CERAMIC CHIP	47PF	5%	50V
		< CONNECTOR >			
CN101	1-779-806-21	CONNECTOR 8P			
CN102	1-843-352-11	PIN, CONNECTOR 16P			
CN103	1-842-256-22	SOCKET, CONNECTOR 15P			
CN201	1-843-174-11	USB CONNECTOR (Ψ)			
		< DIODE >			
D106	6-503-017-01	DIODE DZ2J075M0L			
D107	6-503-031-01	DIODE DZ2J18000L			
D114	6-503-031-01	DIODE DZ2J18000L			
D115	6-503-759-01	DIODE RB751V40, 115			
D116	6-502-961-01	DIODE DA2J10100L			
D309	6-502-970-01	DIODE DZ2J068M0L			
D310	1-805-043-11	ABSORBER, CHIP SURGE			
D311	1-805-043-11	ABSORBER, CHIP SURGE			
D401	6-503-238-01	DIODE GN1G			
D402	6-503-238-01	DIODE GN1G			
D403	6-503-238-01	DIODE GN1G			
D404	6-503-238-01	DIODE GN1G			
D405	6-503-238-01	DIODE GN1G			
D501	6-503-548-01	DIODE DB2441600L			
D601	6-502-970-01	DIODE DZ2J068M0L			
		< FERRITE BEAD >			
FB101	1-500-113-22	BEAD, FERRITE (CHIP) (1608)			
FB102	1-500-113-22	BEAD, FERRITE (CHIP) (1608)			
FB103	1-500-113-22	BEAD, FERRITE (CHIP) (1608)			
FB201	1-481-467-11	BEAD, FERRITE (CHIP)			
FB202	1-414-445-11	BEAD, FERRITE (CHIP) (1608)			
FB301	1-500-113-22	BEAD, FERRITE (CHIP) (1608)			
FB302	1-500-113-22	BEAD, FERRITE (CHIP) (1608)			
FB303	1-500-113-22	BEAD, FERRITE (CHIP) (1608)			

MAIN

Ref. No.	Part No.	Description	Remark
		< IC >	
IC101	6-721-155-01	IC R5F3650KCDZ93FB (for SERVICE)	(See Note 1)
IC102	6-716-993-01	IC MM1836A33NRE	
IC105	6-719-288-01	IC PST8628UL	
IC201	6-721-131-01	IC LC786800E-06US-H	
IC202	6-718-324-01	IC MFI337S3959	
IC301	6-715-945-01	IC BA4560RFVM-TR	
IC302	6-715-945-01	IC BA4560RFVM-TR	
IC303	6-715-945-01	IC BA4560RFVM-TR	
IC304	6-720-774-01	IC PURE5001H-4WX	
IC401	6-718-209-01	IC LV56831P-E	
IC402	6-718-214-01	IC S-1142B90I-E6T1U	
IC501	6-718-913-01	IC OZ539IGN-A1-0-TR	
IC601	6-716-993-01	IC MM1836A33NRE	
IC602	6-715-945-01	IC BA4560RFVM-TR	
IC603	(Not supplied)	IC NJM2884U2-05 (TE2) (See Note 2)	
		< JACK >	
J101	1-566-822-81	JACK (REMOTE IN)	
J301	1-822-712-11	JACK, PIN 4P (FRONT/REAR AUDIO OUT)	
J303	1-843-791-11	JACK (ANT) (ANTENNA IN)	
J304	1-566-822-61	JACK (AUX)	
		< COIL >	
L201	1-457-223-11	COMMON MODE CHOKE COIL	
L251	1-400-073-21	INDUCTOR 4.7uH	
L401	1-460-443-11	CHOKE COIL 140uH	
L501	1-457-874-11	CHOKE COIL 10uH	
L502	1-481-904-11	INDUCTOR 47uH	
		< TRANSISTOR >	
Q101	6-552-949-01	TRANSISTOR LTC044EUBFS8TL	
Q102	6-552-922-01	TRANSISTOR LTA014EUBFS8TL	
Q103	6-552-936-01	TRANSISTOR LTC014EUBFS8TL	
Q104	6-552-892-01	TRANSISTOR LSCR523UBFS8TL	
Q106	8-729-620-07	TRANSISTOR 2SC3052EF-T1-LEF	
Q109	6-552-922-01	TRANSISTOR LTA014EUBFS8TL	
* Q110	6-552-938-01	TRANSISTOR LTC014YUBFS8TL	
Q301	6-552-937-01	TRANSISTOR LTC014TUBFS8TL	
Q302	6-552-937-01	TRANSISTOR LTC014TUBFS8TL	
Q303	6-552-937-01	TRANSISTOR LTC014TUBFS8TL	
Q304	6-552-936-01	TRANSISTOR LTC014EUBFS8TL	
Q305	6-552-937-01	TRANSISTOR LTC014TUBFS8TL	
		< RESISTOR/FERRITE BEAD >	
R101	1-216-845-11	METAL CHIP 100K 5% 1/10W	
R105	1-218-981-91	METAL CHIP 220K 5% 1/16W	
R106	1-218-953-11	METAL CHIP 1K 5% 1/16W	
R107	1-218-953-11	METAL CHIP 1K 5% 1/16W	
R111	1-216-841-11	METAL CHIP 47K 5% 1/10W	
R112	1-216-829-11	METAL CHIP 4.7K 5% 1/10W	
R114	1-216-073-91	METAL CHIP 10K 5% 1/10W	
R115	1-218-977-11	METAL CHIP 100K 5% 1/16W	
R116	1-216-841-11	METAL CHIP 47K 5% 1/10W	
R117	1-216-073-91	METAL CHIP 10K 5% 1/10W	
R118	1-216-801-11	METAL CHIP 22 5% 1/10W	
R130	1-218-959-11	METAL CHIP 3.3K 5% 1/16W	
R131	1-218-953-11	METAL CHIP 1K 5% 1/16W	
R132	1-218-953-11	METAL CHIP 1K 5% 1/16W	
R133	1-218-959-11	METAL CHIP 3.3K 5% 1/16W	
R138	1-218-977-11	METAL CHIP 100K 5% 1/16W	
R139	1-208-911-11	METAL CHIP 10K 0.5% 1/16W	
R140	1-208-911-11	METAL CHIP 10K 0.5% 1/16W	
R143	1-208-911-11	METAL CHIP 10K 0.5% 1/16W	
R149	1-218-977-11	METAL CHIP 100K 5% 1/16W	
R152	1-218-941-81	METAL CHIP 100 5% 1/16W	
R153	1-218-941-81	METAL CHIP 100 5% 1/16W	
R154	1-218-941-81	METAL CHIP 100 5% 1/16W	
R155	1-218-941-81	METAL CHIP 100 5% 1/16W	
R156	1-218-941-81	METAL CHIP 100 5% 1/16W	
R157	1-218-949-11	METAL CHIP 470 5% 1/16W	
R158	1-218-941-81	METAL CHIP 100 5% 1/16W	
R159	1-218-941-81	METAL CHIP 100 5% 1/16W	
R160	1-218-941-81	METAL CHIP 100 5% 1/16W	
R161	1-218-941-81	METAL CHIP 100 5% 1/16W	
R162	1-218-953-11	METAL CHIP 1K 5% 1/16W	
R165	1-218-941-81	METAL CHIP 100 5% 1/16W	
R167	1-218-953-11	METAL CHIP 1K 5% 1/16W	
R168	1-218-977-11	METAL CHIP 100K 5% 1/16W	
R169	1-218-941-81	METAL CHIP 100 5% 1/16W	
R171	1-218-941-81	METAL CHIP 100 5% 1/16W	
R172	1-218-977-11	METAL CHIP 100K 5% 1/16W	
R173	1-218-953-11	METAL CHIP 1K 5% 1/16W	
R174	1-218-941-81	METAL CHIP 100 5% 1/16W	
R175	1-218-977-11	METAL CHIP 100K 5% 1/16W	
R176	1-245-604-11	METAL CHIP 10M 5% 1/16W	
R177	1-218-981-91	METAL CHIP 220K 5% 1/16W	
R179	1-218-941-81	METAL CHIP 100 5% 1/16W	
R180	1-218-990-81	SHORT CHIP 0	
R181	1-218-989-11	METAL CHIP 1M 5% 1/16W	
R183	1-218-977-11	METAL CHIP 100K 5% 1/16W	
R184	1-218-977-11	METAL CHIP 100K 5% 1/16W	
R185	1-218-941-81	METAL CHIP 100 5% 1/16W	
R186	1-218-941-81	METAL CHIP 100 5% 1/16W	
R187	1-218-941-81	METAL CHIP 100 5% 1/16W	
R189	1-218-941-81	METAL CHIP 100 5% 1/16W	
R190	1-218-941-81	METAL CHIP 100 5% 1/16W	
R191	1-218-941-81	METAL CHIP 100 5% 1/16W	
R193	1-218-941-81	METAL CHIP 100 5% 1/16W	
R194	1-218-977-11	METAL CHIP 100K 5% 1/16W	
R195	1-218-941-81	METAL CHIP 100 5% 1/16W	
R197	1-218-941-81	METAL CHIP 100 5% 1/16W	
R198	1-218-977-11	METAL CHIP 100K 5% 1/16W	
R200	1-218-953-11	METAL CHIP 1K 5% 1/16W	
R202	1-218-977-11	METAL CHIP 100K 5% 1/16W	
R203	1-218-941-81	METAL CHIP 100 5% 1/16W	
R204	1-218-941-81	METAL CHIP 100 5% 1/16W	
R205	1-216-295-91	SHORT CHIP 0	
R206	1-218-941-81	METAL CHIP 100 5% 1/16W	
R207	1-218-941-81	METAL CHIP 100 5% 1/16W	
R208	1-218-941-81	METAL CHIP 100 5% 1/16W	
R209	1-218-941-81	METAL CHIP 100 5% 1/16W	
R210	1-218-941-81	METAL CHIP 100 5% 1/16W	
R211	1-218-941-81	METAL CHIP 100 5% 1/16W	
R212	1-218-977-11	METAL CHIP 100K 5% 1/16W	
R213	1-218-977-11	METAL CHIP 100K 5% 1/16W	
R214	1-218-941-81	METAL CHIP 100 5% 1/16W	
R215	1-218-941-81	METAL CHIP 100 5% 1/16W	
R216	1-218-965-11	METAL CHIP 10K 5% 1/16W	
R219	1-218-977-11	METAL CHIP 100K 5% 1/16W	

Note 1: When IC101 on the MAIN board is replaced, the destination setting is necessary. Refer to "NOTE OF REPLACING THE COMPLETE MAIN BOARD OR SYSTEM CONTROLLER (IC101)" on page 4.

Note 2: IC603 on the MAIN board cannot exchange with single. When this part is damaged, exchange the complete mounted board.

Ref. No.	Part No.	Description			Remark
R220	1-218-977-11	METAL CHIP	100K	5%	1/16W
R221	1-218-977-11	METAL CHIP	100K	5%	1/16W
R222	1-218-973-11	METAL CHIP	47K	5%	1/16W
R229	1-216-864-11	SHORT CHIP	0		
R233	1-218-973-11	METAL CHIP	47K	5%	1/16W
R234	1-218-973-11	METAL CHIP	47K	5%	1/16W
R235	1-218-973-11	METAL CHIP	47K	5%	1/16W
R236	1-218-973-11	METAL CHIP	47K	5%	1/16W
R242	1-216-799-11	METAL CHIP	15	5%	1/10W
R243	1-216-799-11	METAL CHIP	15	5%	1/10W
R244	1-218-967-11	METAL CHIP	15K	5%	1/16W
R245	1-218-967-11	METAL CHIP	15K	5%	1/16W
R246	1-218-967-11	METAL CHIP	15K	5%	1/16W
R247	1-218-967-11	METAL CHIP	15K	5%	1/16W
R252	1-218-990-81	SHORT CHIP	0		
R257	1-218-990-81	SHORT CHIP	0		
R259	1-400-334-21	FERRITE, EMI (SMD) (1608)			
R260	1-216-864-11	SHORT CHIP	0		
R261	1-218-947-11	METAL CHIP	330	5%	1/16W
R262	1-216-864-11	SHORT CHIP	0		
R263	1-216-864-11	SHORT CHIP	0		
R264	1-218-961-11	METAL CHIP	4.7K	5%	1/16W
R270	1-218-957-11	METAL CHIP	2.2K	5%	1/16W
R271	1-218-957-11	METAL CHIP	2.2K	5%	1/16W
R272	1-218-990-81	SHORT CHIP	0		
R273	1-218-990-81	SHORT CHIP	0		
R274	1-218-990-81	SHORT CHIP	0		
R275	1-218-990-81	SHORT CHIP	0		
R292	1-216-864-11	SHORT CHIP	0		
R301	1-218-966-11	METAL CHIP	12K	5%	1/16W
R302	1-218-965-11	METAL CHIP	10K	5%	1/16W
R303	1-218-981-91	METAL CHIP	220K	5%	1/16W
R304	1-218-977-11	METAL CHIP	100K	5%	1/16W
R305	1-218-961-11	METAL CHIP	4.7K	5%	1/16W
R306	1-218-961-11	METAL CHIP	4.7K	5%	1/16W
R307	1-218-977-11	METAL CHIP	100K	5%	1/16W
R308	1-218-966-11	METAL CHIP	12K	5%	1/16W
R309	1-218-965-11	METAL CHIP	10K	5%	1/16W
R310	1-218-966-11	METAL CHIP	12K	5%	1/16W
R311	1-218-965-11	METAL CHIP	10K	5%	1/16W
R312	1-216-845-11	METAL CHIP	100K	5%	1/10W
R313	1-218-961-11	METAL CHIP	4.7K	5%	1/16W
R314	1-218-961-11	METAL CHIP	4.7K	5%	1/16W
R315	1-218-977-11	METAL CHIP	100K	5%	1/16W
R316	1-218-965-11	METAL CHIP	10K	5%	1/16W
R317	1-218-966-11	METAL CHIP	12K	5%	1/16W
R318	1-218-929-11	METAL CHIP	10	5%	1/16W
R319	1-218-966-11	METAL CHIP	12K	5%	1/16W
R320	1-218-965-11	METAL CHIP	10K	5%	1/16W
R321	1-218-929-11	METAL CHIP	10	5%	1/16W
R322	1-216-813-11	METAL CHIP	220	5%	1/10W
R323	1-216-813-11	METAL CHIP	220	5%	1/10W
R324	1-216-813-11	METAL CHIP	220	5%	1/10W
R325	1-216-813-11	METAL CHIP	220	5%	1/10W
R326	1-218-945-11	METAL CHIP	220	5%	1/16W
R327	1-218-965-11	METAL CHIP	10K	5%	1/16W
R328	1-218-965-11	METAL CHIP	10K	5%	1/16W
R329	1-218-945-11	METAL CHIP	220	5%	1/16W
R330	1-218-945-11	METAL CHIP	220	5%	1/16W
R331	1-218-965-11	METAL CHIP	10K	5%	1/16W

Ref. No.	Part No.	Description			Remark
R332	1-218-965-11	METAL CHIP	10K	5%	1/16W
R333	1-218-945-11	METAL CHIP	220	5%	1/16W
R334	1-218-965-11	METAL CHIP	10K	5%	1/16W
R335	1-218-973-11	METAL CHIP	47K	5%	1/16W
R336	1-218-943-11	METAL CHIP	150	5%	1/16W
R337	1-216-864-11	SHORT CHIP	0		
R339	1-216-296-11	SHORT CHIP	0		
R340	1-216-063-91	METAL CHIP	3.9K	5%	1/10W
R341	1-216-065-91	METAL CHIP	4.7K	5%	1/10W
R342	1-216-833-11	METAL CHIP	10K	5%	1/10W
R343	1-216-065-91	METAL CHIP	4.7K	5%	1/10W
R344	1-216-833-11	METAL CHIP	10K	5%	1/10W
R345	1-216-063-91	METAL CHIP	3.9K	5%	1/10W
R356	1-216-809-11	METAL CHIP	100	5%	1/10W
R360	1-216-841-11	METAL CHIP	47K	5%	1/10W
R390	1-218-941-81	METAL CHIP	100	5%	1/16W
R403	1-218-965-11	METAL CHIP	10K	5%	1/16W
R404	1-218-965-11	METAL CHIP	10K	5%	1/16W
R405	1-218-977-11	METAL CHIP	100K	5%	1/16W
R407	1-218-965-11	METAL CHIP	10K	5%	1/16W
R501	1-218-941-81	METAL CHIP	100	5%	1/16W
R502	1-216-817-11	METAL CHIP	470	5%	1/10W
R503	1-218-871-11	METAL CHIP	10K	0.5%	1/10W
R504	1-218-981-91	METAL CHIP	220K	5%	1/16W
R505	1-218-885-11	METAL CHIP	39K	0.5%	1/10W
R506	1-218-977-11	METAL CHIP	100K	5%	1/16W
R507	1-208-933-11	METAL CHIP	82K	0.5%	1/16W
R508	1-208-933-11	METAL CHIP	82K	0.5%	1/16W
R509	1-208-909-11	METAL CHIP	8.2K	0.5%	1/16W
R513	1-216-817-11	METAL CHIP	470	5%	1/10W
R514	1-218-929-11	METAL CHIP	10	5%	1/16W
R516	1-216-817-11	METAL CHIP	470	5%	1/10W
R601	1-218-990-81	SHORT CHIP	0		
R602	1-218-961-11	METAL CHIP	4.7K	5%	1/16W
R603	1-218-957-11	METAL CHIP	2.2K	5%	1/16W
R604	1-218-969-11	METAL CHIP	22K	5%	1/16W
R605	1-218-969-11	METAL CHIP	22K	5%	1/16W
R606	1-218-971-11	METAL CHIP	33K	5%	1/16W
R607	1-218-971-11	METAL CHIP	33K	5%	1/16W
R608	1-218-969-11	METAL CHIP	22K	5%	1/16W
R609	1-218-969-11	METAL CHIP	22K	5%	1/16W
R610	1-218-971-11	METAL CHIP	33K	5%	1/16W
R611	1-218-971-11	METAL CHIP	33K	5%	1/16W
R612	1-218-990-81	SHORT CHIP	0		
R803	1-216-864-11	SHORT CHIP	0		
R804	1-216-864-11	SHORT CHIP	0		
		< TUNER UNIT >			
TU252	A-1946-531-A	TUX-DSP03 (TUNER UNIT)			
		< WIRE >			
WR1	1-848-009-11	WIRE, PVC UL1569 AWG18 YEL L53			
		< VIBRATOR >			
X101	1-814-629-11	VIBRATOR, CRYSTAL (32.768 kHz)			
X102	1-814-207-21	VIBRATOR, CERAMIC (7.92 MHz)			
X201	1-814-304-11	VIBRATOR, CRYSTAL (12 MHz)			

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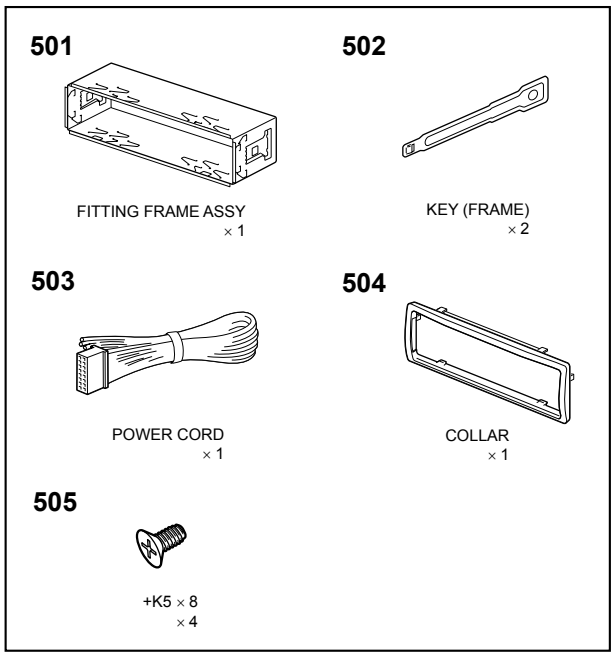
Ref. No.	Part No.	Description	Remark
		MISCELLANEOUS	
		**********	
ANT601	1-754-894-11	BT, ANTENNA	
FP1	A-1978-124-A	PANEL ASSY, FRONT	
FU101	1-532-877-11	FUSE (BLADE TYPE) (AUTO FUSE) (10 A/32 V)	
MIC601	1-542-919-11	MICROPHONE	
PW1	1-846-997-11	CONNECTION CABLE, AUTOMOBILE (POWER)	
**********			
		ACCESSORIES	
		**********	
	1-489-810-42	REMOTE COMMANDER (RM-X231)	
	4-484-593-21	MANUAL, INSTRUCTION (ENGLISH, FRENCH, SPANISH)	
	4-484-594-11	MANUAL, INSTRUCTION, INSTALL (ENGLISH, FRENCH, SPANISH)	
**********			
		PARTS FOR INSTALLATION AND CONNECTIONS	
		**********	
501	X-2583-962-1	FRAME ASSY, FITTING	
502	4-276-003-01	KEY (FRAME) (1 piece)	
503	1-846-997-11	CONNECTION CABLE, AUTOMOBILE (POWER)	
504	4-168-810-02	COLLAR	
505	3-934-325-21	SCREW, +K (5X8) TAPPING (1 piece)	



MEMO

REVISION HISTORY

Checking the version allows you to jump to the revised page.
Also, clicking the version at the top of the revised page allows you to jump to the next revised page.

Ver.	Date	Description of Revision
1.0	2013.11	New